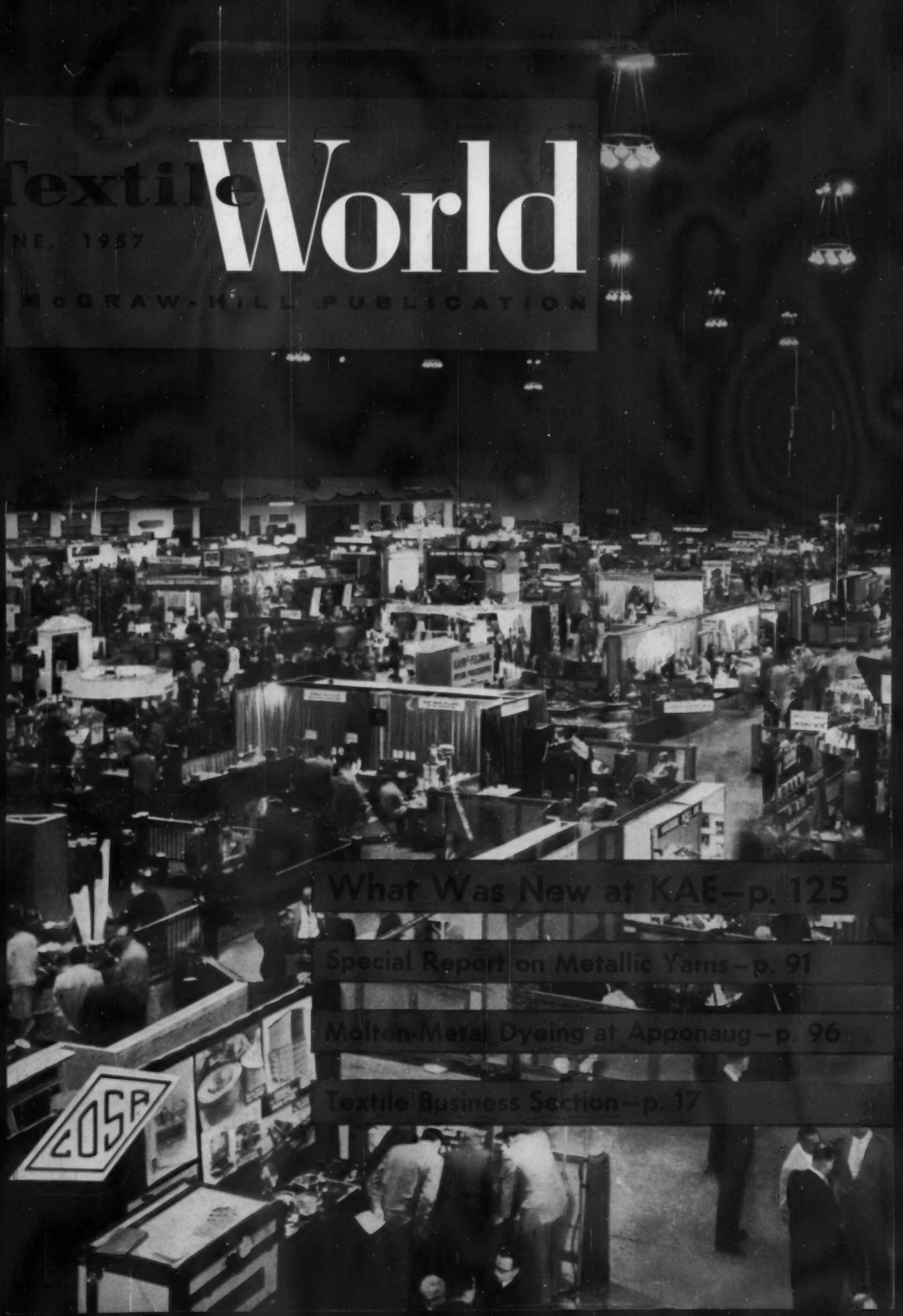
Textile World
JUNE, 1957
McGRAW-HILL PUBLICATION



What Was New at KAE—p. 125
Special Report on Metallic Yarns—p. 91
Molten-Metal Dyeing at Apponaug—p. 96
Textile Business Section—p. 17

Textile Engineering

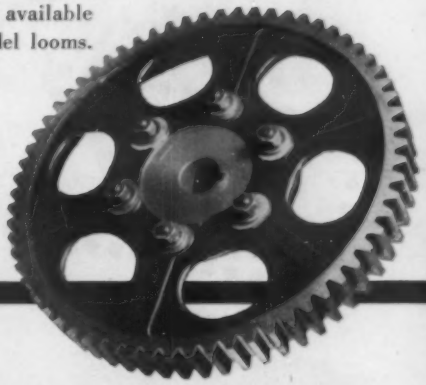
STORAGE & WAREHOUSING

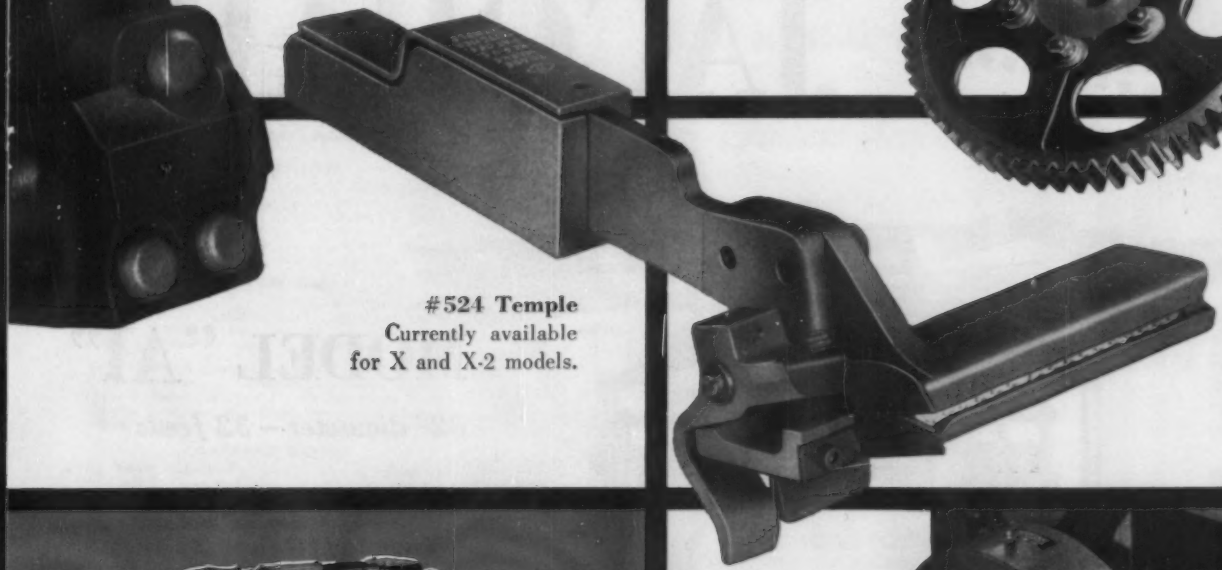
Clean-cut, accessible storage and warehousing has again and again proved its value in time-saving in the textile field. Illustrated is a racked-storage installation, planned by the Textile Engineering Division of Robert and Company Associates. It offers complete floor-to-ceiling storage, with instant package-availability from any level. No need to tear down the stack; center or lower packages can be swiftly reached, with a minimum of handling! This maneuverable aid for mechanized handling represents only one of many Robert and Company plans which have helped textile leaders to realize their profit potential. Asking for an engineering survey *now* means that 40 years' experience is immediately at your service. What has helped others to major progress can be applied to your operation, regardless of your package type or size.

ROBERT AND COMPANY ASSOCIATES
Textile Engineering Division
ATLANTA

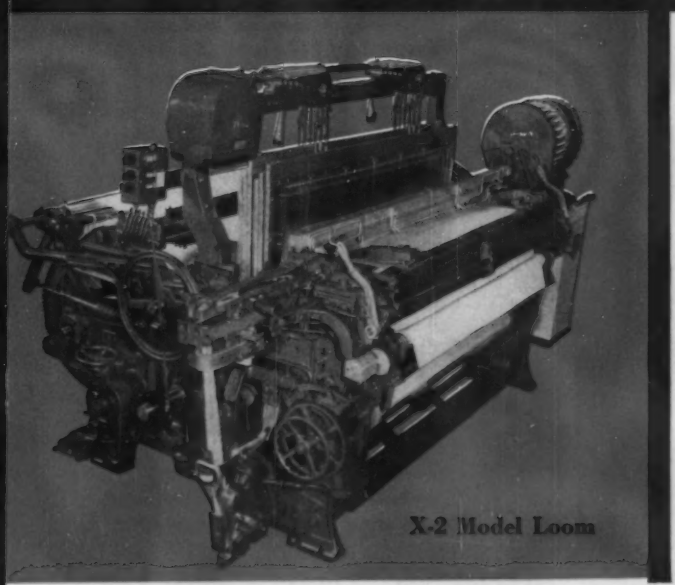
Clamping Sword Construction
X-2 type illustrated.
Similar swords available for
X series and E model looms.

Cam Shaft Gear and Hub
X-2 assembly illustrated.
Similar assemblies available
for XD and XP model looms.

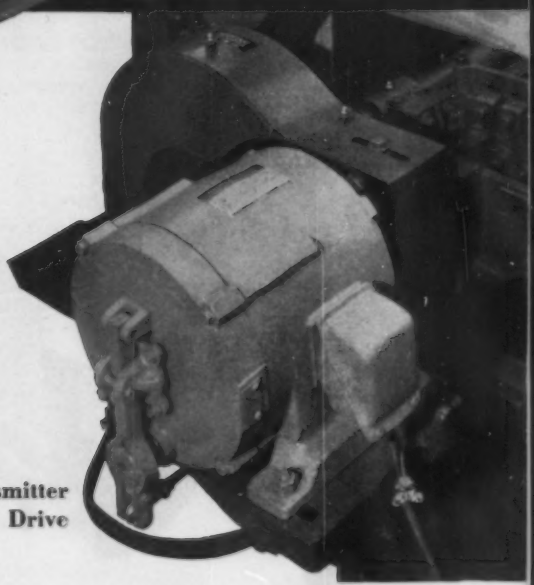




#524 Temple
Currently available
for X and X-2 models.



X-2 Model Loom



Transmitter Type Drive

Next to new looms . . .

Looms equipped with the latest mechanisms and improved repair parts, *designed and built by the original manufacturer*, will meet today's rugged performance requirements.

Draper improved repair parts and mechanisms — some of which are illustrated above — are designed to increase loom production, efficiency, and flexibility.

Lower maintenance costs and ease of application are additional benefits derived from the use of Draper repair parts and mechanisms.

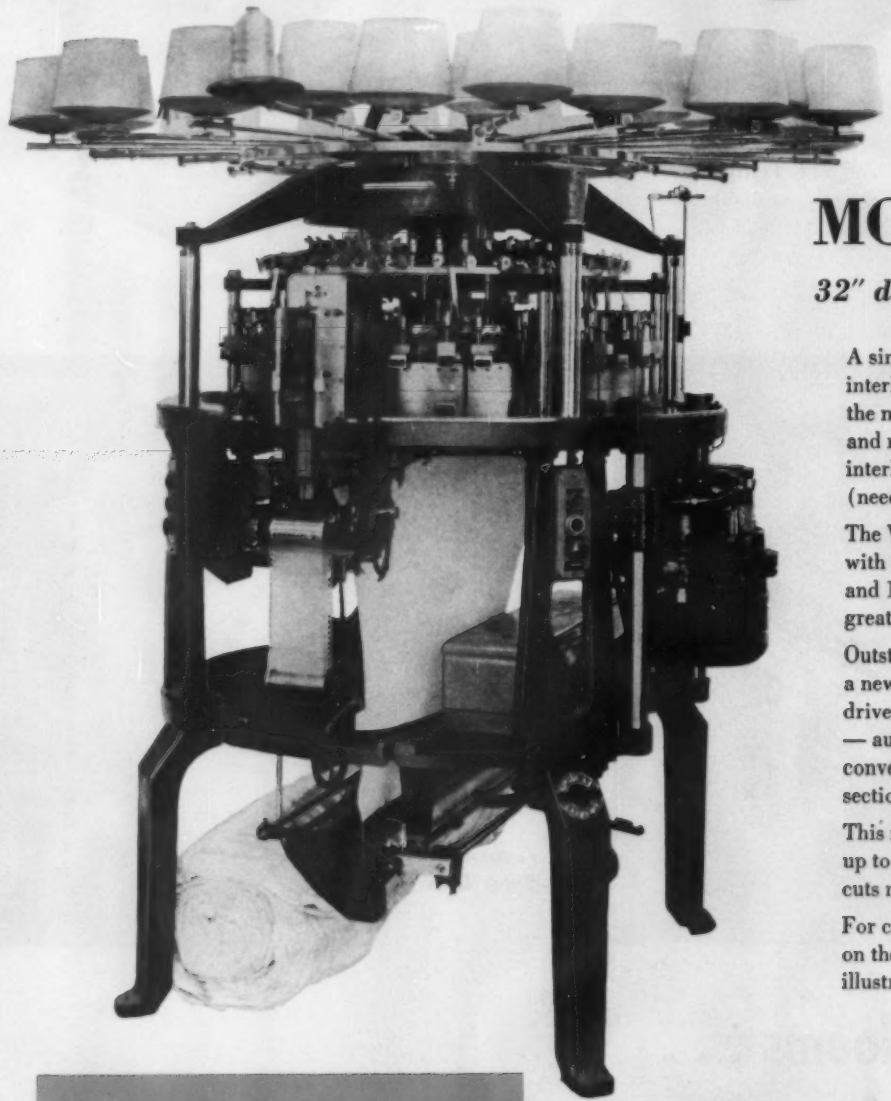
Equipped with Draper improved repair parts and assemblies, your existing looms will be second only to *new Draper looms.*

DRAPER CORPORATION

Hopedale, Mass. *Atlanta, Ga.* *Greensboro, N. C.* *Spartanburg, S. C.*

SINGLE PURPOSE *Circular* JACQUARD

NEW



MODEL "AI"

32" diameter – 32 feeds

A single purpose circular interlock machine, 32" in diameter, the model AI produces a larger and more flexible piece of true interlock cloth, (needle over needle).

The Wildman Jacquard AI with 32 feeds in the body and 16 feeds in the cuff offers greater production.

Outstanding features include a new vertical two-speed motor drive with jogging features, — automatic lubrication — and convenient dial and cylinder section removal.

This model is available in cuts up to 16½ per inch. However, finer cuts may be obtained, if desired.

For complete information on the model AI write for illustrated brochure.

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Leading manufacturers of fine knitting machinery

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Textile World

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Textile World

CALENDAR

June

AATCC Council, Hotel Statler, New York, N. Y., June 7.

Southern Textile Association, annual convention, Ocean Forest Hotel, Myrtle Beach, S. C., June 20 to 22.

AATCC, South Central Section, annual meeting, Lookout Mountain, Tenn., June 21 & 22.

September

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., Sept. 4.

Fiber Society, Textile Institute, joint meeting, Hotel Statler, Boston, Mass., Sept. 4 to 6.

AATCC, Southeastern Section, Harmony Club, Columbus, Ga., Sept. 14.

Textile Quality Control Association, fall meeting, Barrington Hotel, Charlotte, N. C., Sept. 19 & 20.

AATCC, South Central Section, Hotel Patton, Chattanooga, Tenn., Sept. 20.

Northern Textile Association, annual meeting, Wentworth By-The-Sea, Portsmouth, N. H., Sept. 25 & 26.

Combed Yarn Spinners Association, annual meeting, The Cloister, Sea Island, Ga., Sept. 26 & 27.

AATCC, Delaware Valley Section, New York Section, Trenton, N. J., Sept. 27.

Carded Yarn Association, annual meeting, The Cloister, Sea Island, Ga., Sept. 27 & 28.

AATCC, Piedmont Section, Hotel Barringer, Charlotte, N. C., Sept. 28.

Textile Operating Executives of Georgia, fall meeting, Hightower Textile Building, Georgia Institute of Technology, Atlanta, Ga., Sept. 28.

October

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., Oct. 2.

Chemical Finishing Conference, National Cotton Council of America, Statler Hotel, Washington, D. C., Oct. 2 & 3.

Southern Textile Methods & Standards Association, fall meeting, Clemson House, Clemson, S. C., Oct. 10 & 11.

Alabama Textile Operating Executives, fall meeting, Thach Auditorium, Auburn, Ala., Oct. 12.

AATCC, Rhode Island Section, Providence Engineering Society, Providence, R. I., Oct. 24.

AATCC, Mid-west Section, Bismarck Hotel, Chicago, Ill., Oct. 26.

National Industrial Packaging & Handling Exposition, Convention Hall, Atlantic City, N. J., Oct. 28 to 31.

November

AATCC, Delaware Valley Section, Sheraton Hotel, Philadelphia, Pa., Nov. 1.

AATCC, Western New England Section, annual meeting, Hartford, Conn. area, Nov. 1.

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., Nov. 6.

AATCC, national convention, Hotel Statler, Boston, Mass., Nov. 14 to 16.

December

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., Dec. 4.

AATCC, Rhode Island Section, annual meeting, Providence, R. I., Dec. 5.

AATCC, Delaware Valley Section, Kugler's Restaurant, Philadelphia, Pa., Dec. 6.

AATCC, Northern New England Section, annual meeting, Hotel Continental, Cambridge, Mass., Dec. 6.

AATCC, Southeastern Section, Dinkler Plaza Hotel, Atlanta, Ga., Dec. 7.

AATCC, Western New England Section, Rapp's Restaurant, Shelton, Conn., Dec. 13.

TEXTILE WORLD. Published monthly, with an additional issue in July, by McGraw-Hill Publishing Co., Inc., EXECUTIVE SUBSCRIPTION, AND ADVERTISING OFFICES: 330 W. 42nd Street, New York 36, N. Y. EDITORIAL OFFICE: 201 E. Coffee Street, Greenville, S. C. Publication Office, 99-129 North B'way, Albany 1, N. Y. Second-class mail privileges authorized at Albany, N. Y. **For subscriptions,** write to: TEXTILE WORLD Subscription Service, 330 West 42nd Street, New York 36, N. Y. **State company and position. Subscriptions are solicited only from executives, engineers and technicians in textile manufacturing or finishing plants.** Single copies $1.00. United States and Possessions and Canada, $2 for 1 yr. All other countries, $15 for 1 yr. Printed in USA. Annual index in Jan. issue.

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Double Check Strap Life

with Gates *TEX-HIDE* Multi-Check Straps

Actual service records prove Gates patented Tex-Hide Multi-Check Straps last twice as long as ordinary straps.

Unlike straps made in one solid band, Gates Multi-Checks are composed of four separate bands.

Multi-Checks minimize adjustments . . . cut "down time"

Tex-Hide — an exclusive Gates material — has a special capacity for absorbing shocks over long periods.

Furthermore, it is unaffected by humidity . . . will not stretch or distort like leather . . . retains its original shape throughout the life of the strap. Thus, adjustments are seldom required.

With Gates patented Tex-Hide Multi-Check Straps you'll get *smoother* loom operation . . . *higher* quality cloth . . . lower maintenance costs.

The Mark of Gates® Specialized Research

The Gates Rubber Co., Denver, Colorado

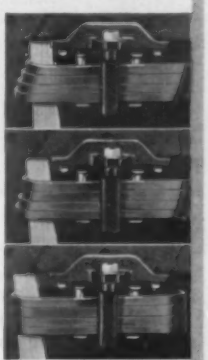
GATES Distributors are in the Yellow Pages

TPA-161

See the difference

With the ordinary one-band strap all the shock and wear from the picker stick are concentrated at one point. The strap deforms rapidly; takes a permanent bowed set. The deformed strap checks only on the extreme ends of the pick and return stroke — result is an uneven check.

Now see why the *four bands* of the Gates patented Tex-Hide Multi-Check Strap give smoother checking action . . . insure long life.



1. As the checking action begins, a portion of the picker stick force is absorbed by the top band.

2. As the stick continues its return motion, the second band comes into play, absorbing more of the shock.

3. And the checking action is completed as the third and fourth bands gradually absorb the remaining energy in the picker stick.

The checking action is smooth, even and gentle — wear is distributed across the whole width of the strap. As a result, Gates patented Tex-Hide Multi-Check Straps are lasting twice as long as the best one-band straps available.

Take-up Roll Coverings
Card Bands
Cone and Evener Belts
Spinning Frame Drives

Reversible Pickers

Tex-Hide Harness Straps

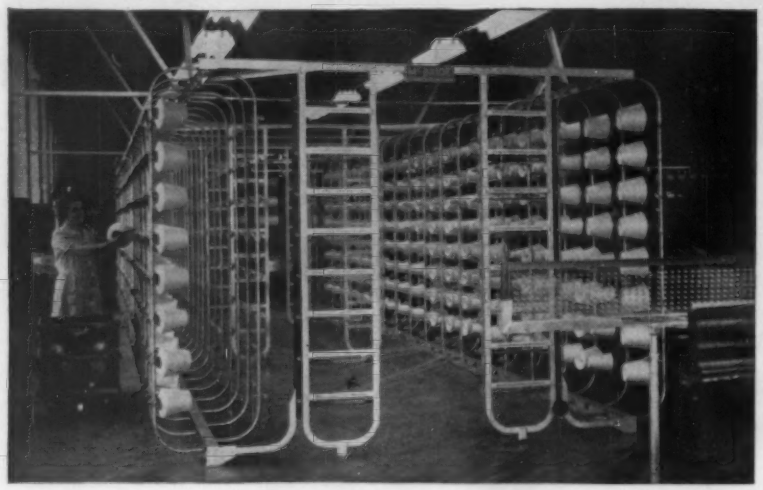
Tex-Hide and Vulco Loop Pickers

Tex-Hide, Vulco and Super Tex-Hide Lug Straps

Gates Textile Accessories

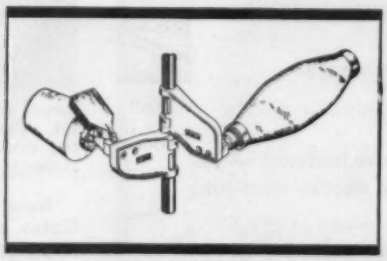
For more data, write this page number on Reader-Service card. →

McBRIDE CREEL CORNER

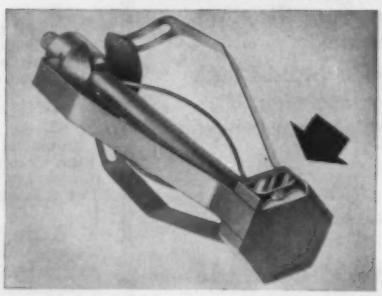


Can your warp room handle the great variety of modern packages? Consider these advantages of a McBride Creel Swing Arm Assembly.

- **Rugged construction for rigid support of heaviest packages.**
- **Readily swings out for package change, snaps back into locked position.**
- **Accommodation of most packages without special adapters by Quik-Change Cone Holder or Bowed Spring Spindle; adapters available for the few exceptions.**
- **Perfectly smooth surfaces; no ragged or sharp edges to snag ballooning yarn.**
- **Yarn won't fall off behind the package; self-adjusting, polyurethane Anti-Snagging Pad firmly but gently follows back edge of package during draw off.**



McBride Swing Arm Assembly



McBride Quik-Change Cone Holder in position over Bowed Spring Spindle. Note spring thumb release; snaps back on.

We specialize in difficult warping problems. Ask us about yours.

CREELS for every purpose, CONE HOLDERS, STOP MOTIONS, TENSION CONTROLS, WARP BEAMS, FLANGES, CARPET INSPECTION TABLES, METAL AND WOOD ROLLS. COMPLETE ENGINEERING SERVICE IS PART OF EVERY McBRIDE INSTALLATION

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Letters From Readers

We welcome your comments. Whether you agree or disagree, with us or anybody else, we will be glad to have you air your views.

Unless you ask us not to, we will use your name and company connection when your letter is printed. If you prefer to have your opinions appear unsigned, we will respect your confidence by using only a set of initials.

Write to Editor, Round Table, TEXTILE WORLD, 201 E. Coffee St., Greenville, S. C.

CLEAR-CUT DEFINITIONS FOR SEAMLESS AND CIRCULAR HOSIERY

[Confusion of the terms "seamless" and "circular" hosiery has led Textile Machine Works, Reading, Pa., to publish simple and clear definitions of the two types of hosiery. These definitions clearly distinguish the terms and can end their confusion.

We are glad to adopt the definitions for use in TEXTILE WORLD *and heartily recommend their use throughout the hosiery branch of the industry.—* EDITOR]

From Textile Machine Works' 1956 *Statistical Survey:*

"In any industry as complex as the hosiery knitting industry, there are always terms and expressions used rather ambiguously. Two of these we have come across are 'seamless hosiery' and 'circular hosiery.' In order to differentiate between men's and ladies' hosiery and the variations of each, we propose to define them as follows, thereby bringing about a uniform designation.

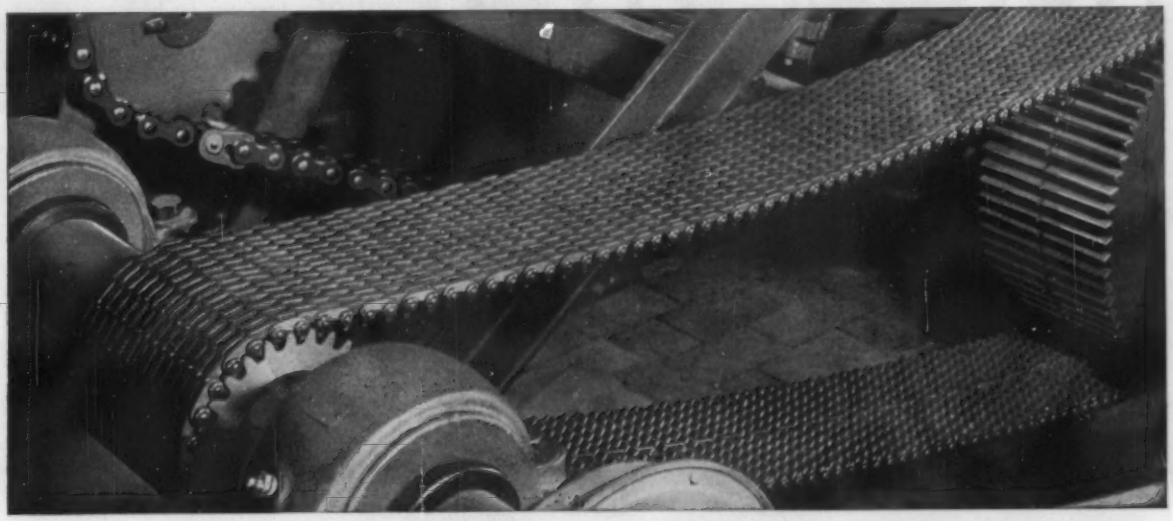
Seamless hosiery—all ladies' full length hosiery knit on circular machines such as those normally reported by the National Association of Hosiery Manufacturers under the specification, Ladies' Seamless.

Circular hosiery—all other types of socks knit on circular knitting machines, including infants', children's, misses', and men's styles.

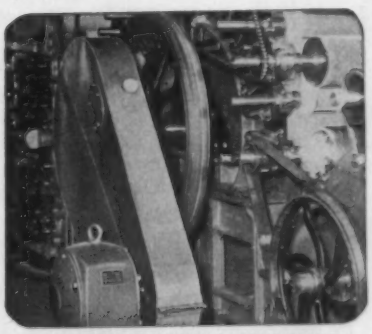
CONTINUED ON PAGE 8

Check your drives against the benefits of

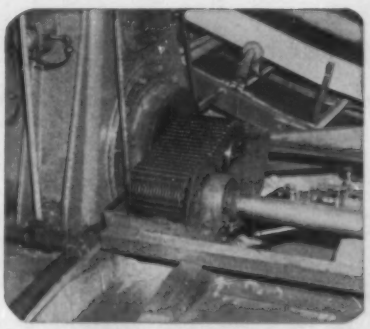
LINK-BELT silent chain



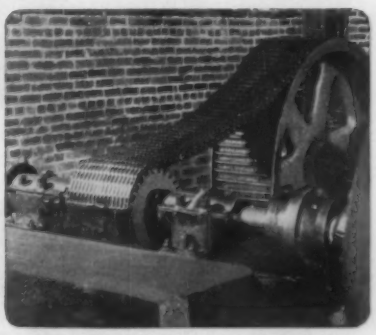
☐ **HIGH SPEED.** Link-Belt silent chain drives are noted for slipless dependability—maintain better than 98% efficiency whether operating over large or small diameter wheels or on long or short centers. For further details on these and more advantages, call your Link-Belt office or authorized distributor.



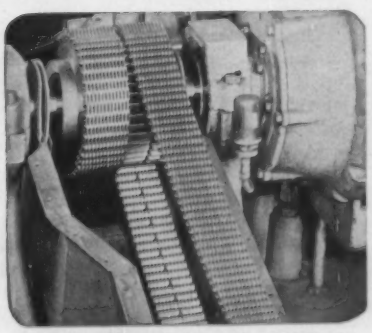
☐ **ADVERSE OPERATING CONDITIONS.** Heat, humidity, cold do not lower Link-Belt silent chain's great efficiency.



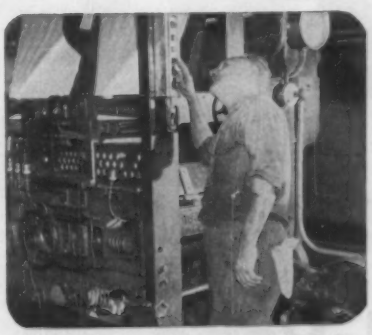
☐ **LARGE OR SMALL HP.** A versatile line, these Link-Belt drives are available from fractional to thousands of hp.



☐ **LARGE RATIOS.** Link-Belt silent chain operates efficiently on extremely short centers at ratios as high as 10-to-1.



☐ **LIMITED SPACE.** Easy to assemble in close quarters, Link-Belt silent chain permits built-in drives, compact housings.



☐ **LONG LIFE.** After 13 years on this newspaper press at speeds up to 4,700 fpm, Link-Belt silent chain is still efficient.

Ask for 88-page Book 2425 — complete data on Link-Belt silent chain drives.

LINK-BELT

14,035

SILVERSTREAK SILENT CHAIN DRIVES

LINK-BELT COMPANY: Executive Offices, Prudential Plaza, Chicago 1. To Serve Industry There Are Link-Belt Plants, Sales Offices, Stock Carrying Factory Branch Stores and Distributors in All Principal Cities. Export Office: New York 7; Canada, Scarboro (Toronto 13); Australia, Marrickville, N.S.W.; South Africa, Springs. Representatives Throughout the World.

HORSEPOWER

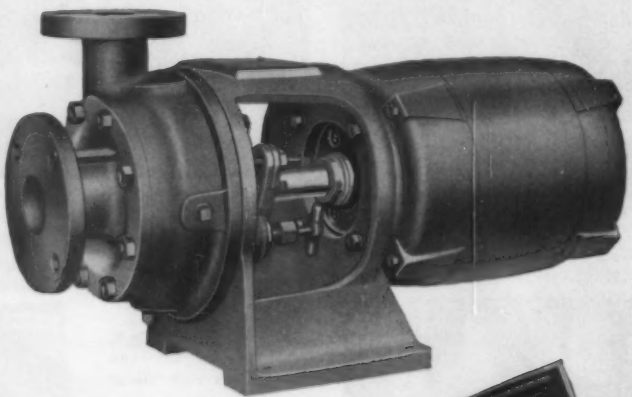
MEANS MORE TO THE PLANTS INSTALLING INGERSOLL-RAND

MOTORPUMPS

It's a fact that the efficient I-R construction often enables you to use a smaller Motorpump to do the work usually demanded of pumps of greater horsepower!

So, I-R Motorpumps reduce your costs in several ways. First of all, in original cost. Save weight and space, too. Deliver more gallons-per-minute per horsepower used . . . and cut maintenance costs as well, because Motorpumps are built for longer, trouble-free service!

If you're not familiar with the famous I-R Motorpump line you'll do well to get full details right away.



The latest catalog gives complete data needed to choose a Motorpump . . . from ¼ to 75 hp, capacities 5 to 2800 gpm, heads to 650 ft. Write to:

Ingersoll-Rand

9-366 11 Broadway, New York 4, N. Y.

← For more data, write this page number on Reader-Service card.

CONTINUED FROM PAGE 6

HERE'S ANOTHER WAY TO SET WEAVER JOBLOADS

Dear Editor:

May I go very far back and refer to your October, 1951, issue and the article "Setting a Jobload"? It's part of my job to set up weaver jobloads, and our system differs basically from that set forth in the article.

In setting weaver jobloads, we figure minutes per 10,000 picks instead of minutes per loom hour. Machine time per 10,000 picks divided by the weaver's standard minutes gives the number of looms per set. Only at this point can the possible loom efficiency be calculated, with the loss of production through interference being taken into consideration.

Our way builds up to the number of looms a weaver should tend under given conditions.

ALAN Y. FLETCHER

Cabinet Milano
Paris, France

DON'T USE READY-MADE ANSWERS

Mill management is well acquainted with the form letter as used in business and industry. These letters, following a routine pattern to meet recurring situations, have both strong points and weaknesses.

Less readily observed is a habit that foremen in the mill may have formed.

Certain problems brought to them by workers are met with repetition of the same words or thoughts. In fact, the entire reply may fall into a design strongly resembling the form letter, except that it's spoken instead of written.

This practice undoubtedly saves thinking on the part of the foreman, but it does little to give helpers the precise information they need for their particular problems.

A sort of form talk does well enough during the training period of new men. In fact, if the foreman has polished his instructions until he reaches the point of assured results, then it would be impractical to make changes as long as circumstances remained the same. To the new employee, such talks are fresh and therefore still effective.

CONTINUED ON PAGE 10

MORE THAN 2½ MILLION SPINDLES NOW EQUIPPED WITH ROBERTS HIGH DRAFT

ROBERTS SPINNING NEWS

PUBLISHED BY ROBERTS COMPANY SANFORD, NORTH CAROLINA

VOL. 12 SANFORD, NORTH CAROLINA NO. 3

ALL THREE LINES IN TOP ROLL SUSPENSION USE BALL BEARINGS

The Roberts Ball Bearing Top Roll Suspension System uses double-row ball bearings in front, middle and back lines and incorporates many other important design advantages.

Cots have ½" hole diameter, revolve together making lap removal simpler, and are buffed on standard equipment, without attachments. Full length revolving clearers are used.

Front and back rolls are interchangeable making sequence buffing possible.

The double-row bearing raceways are ground directly into ½" shafts. Bearings are grease-packed for life and a 2-piece labyrinth seal protects them from lint entrance and from roll picker damage.

The system has controlled self-alignment. Conventional deadweighting or new spring weighting is optional.

An alternate arrangement also available employs a ball bearing top roll and special suspension on the front line only with Roberts Cap Bars and solid top rolls on middle and back top rolls.

Roberts also continues to offer its No-Oil Cap Bar and Saddle system for all three lines, now installed in more than 2½ million spindles.

SPINNING MODERNIZATION AT LOWEST COST

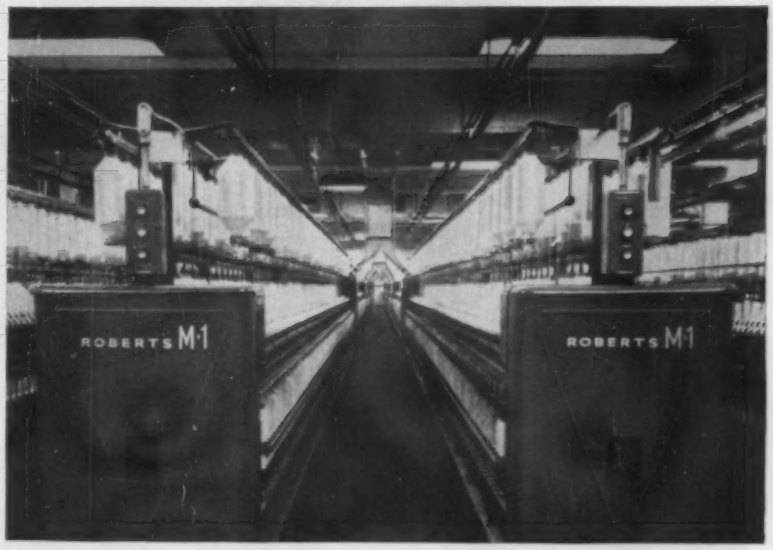
The cost-cutting, performance, and quality features of Roberts Spinning can be obtained through changeovers to the mills' existing spinning frames, or through rebuilt frames supplied by Roberts, as well as Roberts M-1 Spinning Frames.

Changeovers can include drafting systems, spindles, creels, suction cleaning, tape drive, gearing, or any combination of these to provide the maximum return for minimum expenditures.

Roberts Model 55-R Rebuilt Frames provide complete new spinning performance making use only of non-functional support members of older frames, thus affecting a substantial saving.

Roberts M-1 Spinning Frames are excitingly new from the ground up, with all-ball-bearing features. They are available in 39-inch, 36-inch, and the space-saving 25-inch widths.

ROBERTS SPINNING FRAMES SET TODAY'S STANDARD FOR PRODUCTION, YARN QUALITY AND INVESTMENT



Roberts Spinning is setting today's standard for comparison in high drafts, package sizes, roving bobbin sizes, front roll speeds, ends up, yarn break factor – and at the lowest investment cost per spindle.

The Roberts M-1 Spinning Frame is simple and straightforward, free from radical innovations or gadgets. Its design has already been tried and proven in many successful applications. It embodies all the ball bearing features most wanted in a modern frame, giving highest production and lowest maintenance.

Roberts Double-Apron Drafting produces highest break factors, best yarn evenness and lowest ends down in a range of drafts from 10 to 60, for yarn numbers from 2's to 100's, in cotton, synthetics with staples up to 3 inches long, or blends.

Large package flexibility is an important feature. One basic model of the Roberts M-1 Spinning Frame is adapted to run warp bobbins with lengths from 10 inches to 12 inches as well as filling quills. Standard gauges from 3 inches to 4½ inches can be arranged to employ the maximum desirable ring size suitable for the yarn number and twist constant.

The frame chassis is of rugged construction. The working motions use ball bearings for every turning and oscillating motion where practical. The all-ball-bearing head design is outstanding in its simplicity and flexibility.

All gears in the head are hardened and have one pitch, one width, one bore and one keyway, making them completely interchangeable. Greased-for-life bearings are used in the head and all plain bearings and studs are eliminated. Draft and lay constants are adjusted simply over the complete range of yarn numbers.

Standard equipment includes Roberts Ball Bearing Spindles, Roberts built-in UnitVac Suction Cleaning. Roberts AeroCreels are available in every desired package size, single or double.

For more data, write this page number on Reader-Service card. →

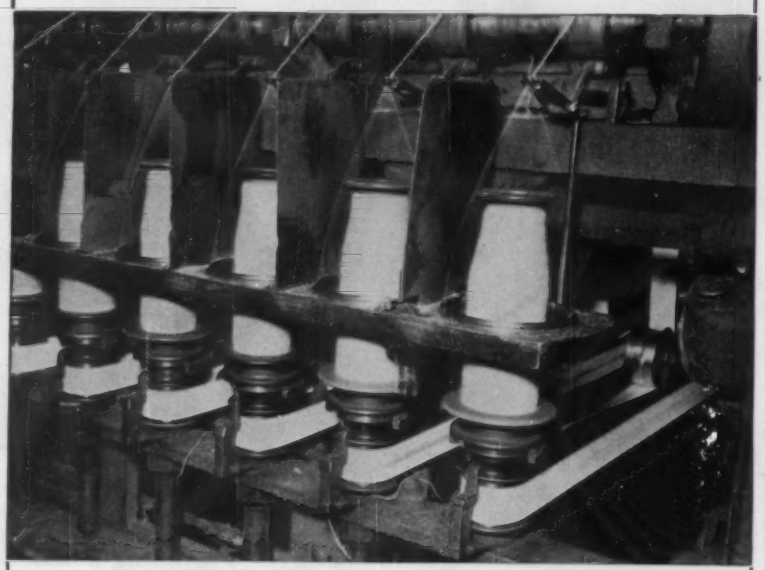
Booth

Originators of STRIP-O-MATIC CARD CLOTHING

FIRST . . . . . STRIP-O-MATIC

SECOND . . . . . SUPR-O-TAPE

Now... SUPR-O-BAND



SUPR-O-BAND, the new banding for spindle drives on spinning, twisting, and roving frames. Promises to be as successful as SUPR-O-TAPE that revolutionized woolen condensing "over night."

ALREADY PROVED by more than a year of rugged mill tests. Note these plus features:

- IMPROVED QUALITY
- LOWER POWER CONSUMPTION
- INCREASED PRODUCTION
- MORE ECONOMICAL

BECAUSE . . . SUPR-O-BANDS Give:

- OPTIMUM SPINDLE SPEED
- LONG LIFE
- UNIFORM TWIST
- MAXIMUM FRICTION—NO SLIPPAGE
- LOWEST COST

SUPR-O-BANDS are lint-free; use belt-hooks or stitching.

- STRIP-O-MATIC CARD CLOTHING
- CONVENTIONAL CARD CLOTHING
- SUPR-O-TAPE FOR CONDENSERS

BENJAMIN BOOTH COMPANY

ALLEGHENY & JANNEY STS., PHILA. 34, PA.

Booth

ROUND TABLE

CONTINUED FROM PAGE 8

However, in order to hold the respect of older workers, the foreman must avoid trying to use routine words and solutions. These men feel they have a problem that is out of the ordinary or they would have solved it themselves.

So they resent being handed a cut-and-dried answer that fails to cover the exact situation, including individual characteristics of problem and worker alike. Their question is personal; they believe the answer should be too.

When mill employees say, "Why bother the foreman? I know in advance what he'll tell me," they may be coming very close to the exact truth.

Help foremen cure themselves of the form-talk habit, and the relationship between them and their men is bound to improve.

GEORGE M. DODSON

Harrisburg, Pa.

HERE'S AN EASIER WAY TO MARK NYLON HOSIERY

Dear Editor:

I was interested in your January Question-and-Answer page about identifying seamless hosiery so that the machine number is known after the stockings are dyed. I agree entirely with the answer given, but perhaps your readers may be interested in a method developed and used in this country.

A special marking ink that shows up only under ultraviolet light is used with a rubber stamp to mark large numbers on the stocking welts. Any range of numbers, letters, or production data may be included in the mark.

The ink is colored to show that the stamp has been correctly made. The stockings are then preset or preboarded and dyed in the usual manner.

The stockings are immediately identified under ultraviolet light.

We feel that this method may have certain advantages where quality-control systems operate on seamless and full-fashioned hosiery; and it does eliminate the tuck stitches.

H. J. HALL

Bennett Bros.
Hinckley, England

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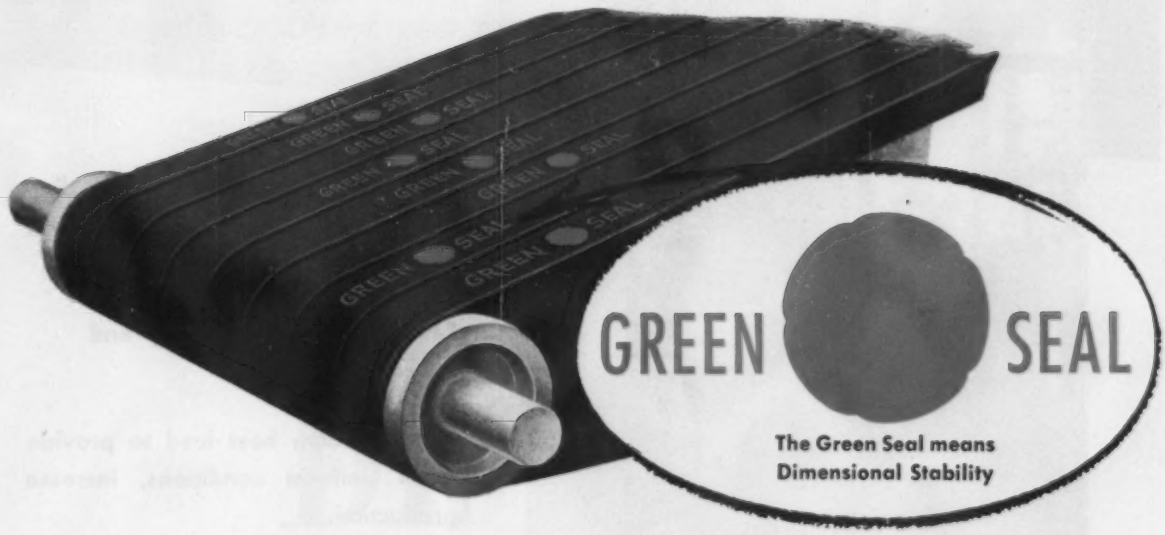
Another Goodyear First:

V-Belts *with the* Green Seal



stay matched from factory to drive

The Green Seal signifies true dimensional stability. It means that now when you reach for a matched set of V-belts, you can be sure they're matched – no matter how long they've lain on the shelf. And that means longer life and a minimum of down time.

It used to be that only steel-cable V-belts by Goodyear were length stabilized. But now, through the miracle of Triple-Tempering, they've been joined by all the other Goodyear Industrial V-belts.

Triple-Tempering is the exclusive process wherein synthetic cord is carefully brought to the peak of strength and stability by controlled tempering with Tension, Temperature and Time. And this gives you not only *length* stability in storage, but greater shock- and stretch-resistance on the drive.

In addition to 3-T load-carrying members, the Green Seal also brings you "balanced construction." This means each component of the belt is specifically designed to its job to give you cleaner, smoother, longer running which adds up to maximum, trouble-free horsepower hours at minimum cost.

The next time you need V-belts, be sure they're wearing the Green Seal–the mark of a V-belt made with the technical know-how of the world's largest rubber company. They're readily available at your Goodyear Distributor. Or write for details to Goodyear, Industrial Products Division, Lincoln 2, Nebraska, or Akron 16, Ohio.

DIMENSIONALLY STABLE V-BELTS by

GOODYEAR

THE GREATEST NAME IN RUBBER

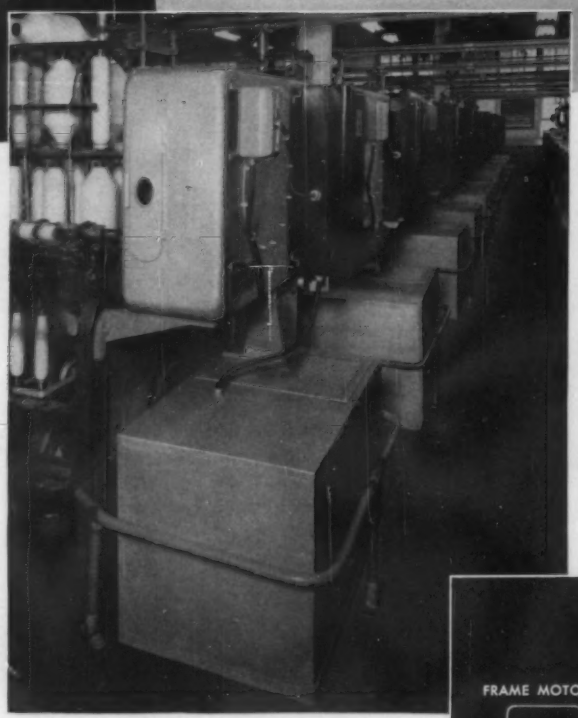
Green Seal—T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

For more data, write this page number on Reader-Service card. →

Does three jobs at one time!

NEW! Bahnson Central Heat Removal System

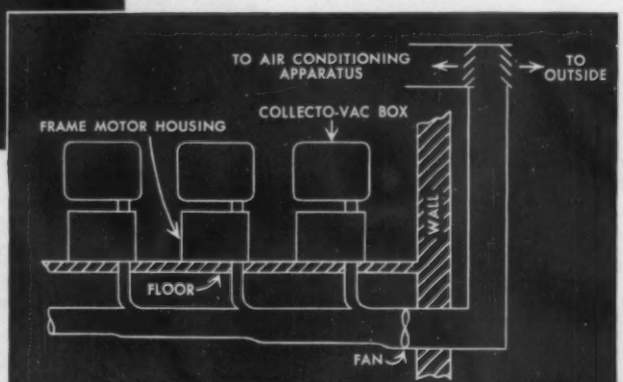
PAT. PENDING



1. **Removes frame motor heat thus eliminating concentrated heat in motor alley.**
2. **Takes out heat added by end collection units.**
3. **Reduces room heat load to provide more uniform conditions, increase production.**

MORE HEAT REMOVAL — Only the Bahnson Central Heat Removal System takes out *approximately two times more unwanted heat* than other designs. This fact, based on comparative field tests, proves the value of the Bahnson system in helping you to improve production efficiency in your mill by maintaining better relative humidity and temperature levels.

IMPORTANT ADDED ADVANTAGES — The unit design and installation of the Central Heat Removal System avoids disrupting production due to single fan failure, and the "quick latch" construction of the frame motor enclosure permits easy access. C.H.R. is adaptable to existing end collection systems with a minimum of conversion.



"Hot air" from the collection units and motor alley is pulled out through the central duct and automatically discharged outdoors or returned for recirculation to the air conditioning system or room.

Bahnson P. M.* Plan

Complete *Package Modernization Plan with new equipment for end collection, cleaning, creels, air conditioning. Offers one-source responsibility and service plus dollar savings.

Bahnson COMPANY
WINSTON-SALEM, N. C.

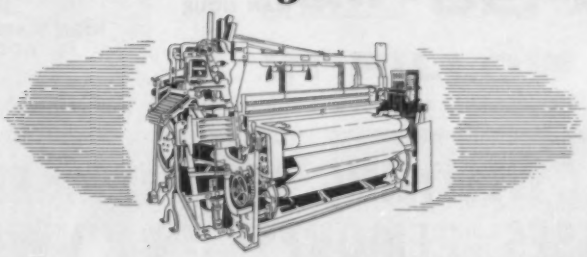
For more information:

Let our representative explain the application and benefits of the Bahnson Central Heat Removal System with regard to your heat problems. Just write or call us.

AIR CONDITIONING / VACUUM COLLECTION / CLEANING / CREELS

BE SURE

you get the TOP PERFORMANCE
that's built into every C&K LOOM



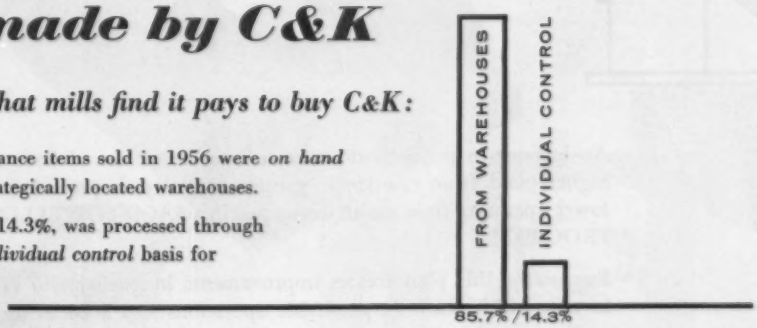
BE SURE

you use only LOOM PARTS
made by C&K

...and here's proof that mills find it pays to buy C&K:

85.7% of all maintenance items sold in 1956 were *on hand* and *shipped* from strategically located warehouses.

The balance, a mere 14.3%, was processed through C&K shops on an *individual control* basis for prompt shipment.



CROMPTON & KNOWLES CORPORATION
C&K
WORCESTER, MASS. U.S.A.

CROMPTON & KNOWLES *Corporation*

MANUFACTURER OF
THE WORLD'S LONGEST LINE OF AUTOMATIC BOX LOOMS

•

WORCESTER 1, MASSACHUSETTS, U. S. A.
CHARLOTTE, N. C. • PHILADELPHIA, PA. • ALLENTOWN, PA.
Crompton & Knowles Jacquard & Supply Co., Pawtucket, R. I.
Crompton & Knowles of Canada Ltd., Montreal, Quebec

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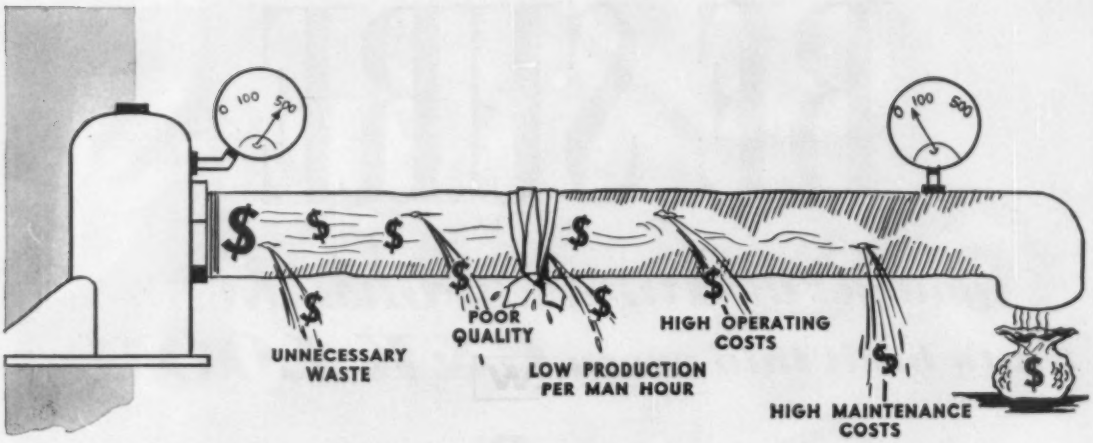
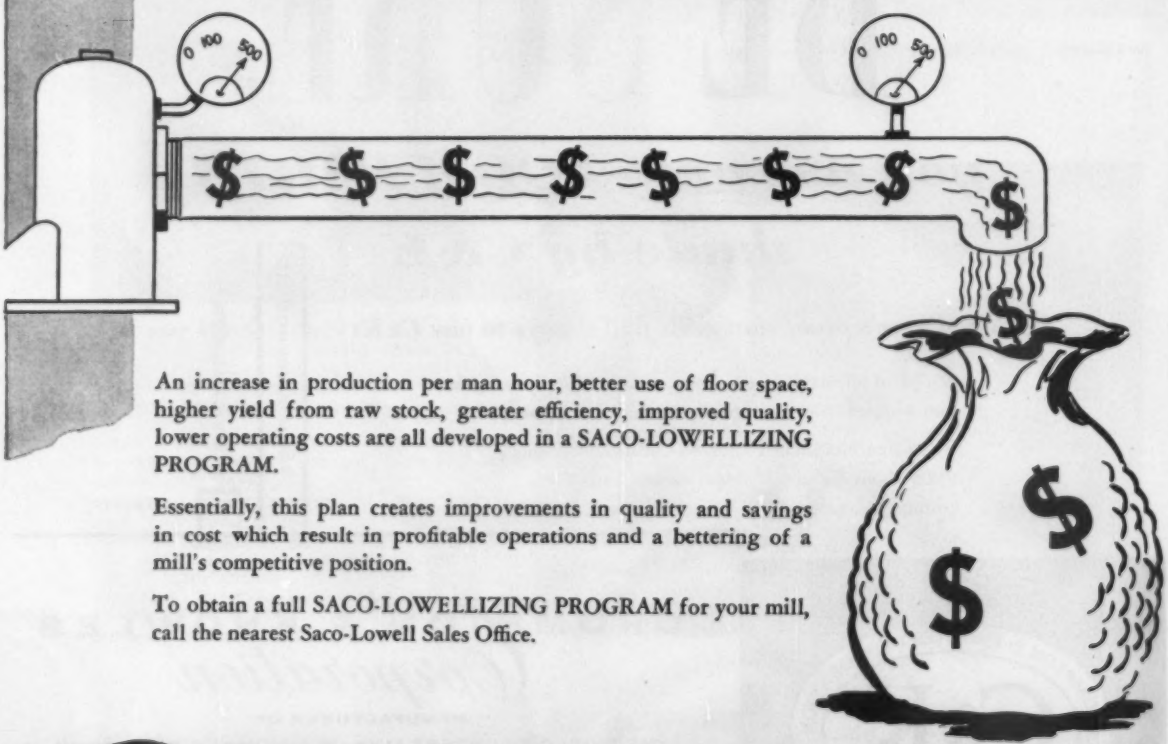


A SACO-LOWELLIZING PROGRAM ELIMINATES THESE LOSSES, REMOVES THE UNWARRANTED AND UNNECESSARY DRAIN ON PROFITS



An increase in production per man hour, better use of floor space, higher yield from raw stock, greater efficiency, improved quality, lower operating costs are all developed in a SACO-LOWELLIZING PROGRAM.

Essentially, this plan creates improvements in quality and savings in cost which result in profitable operations and a bettering of a mill's competitive position.

To obtain a full SACO-LOWELLIZING PROGRAM for your mill, call the nearest Saco-Lowell Sales Office.

SACO-LOWELL SHOPS

60 BATTERYMARCH STREET, BOSTON 10, MASS.

Shops at BIDDEFORD and SACO, MAINE, and SANFORD, N.C. Sales Offices CHARLOTTE GREENSBORO GREENVILLE ATLANTA

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FACTS

about

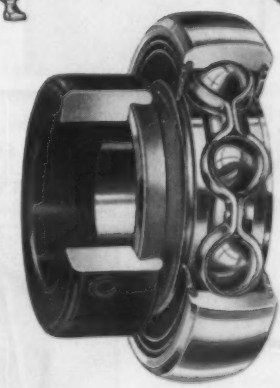
NEW DEPARTURE BALL BEARINGS

NOW A NEW DEPARTURE IN PILLOW BLOCKS

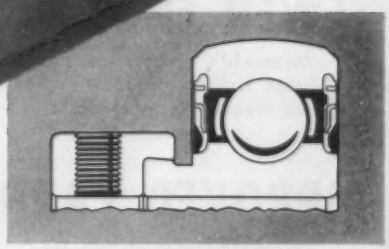
- Clean, rigid, compact design.
- Free of any lubricating fixtures.
- New Departure ball bearings sealed and lubricated-for-life.
- Pillow Blocks easily mounted without special tools.
- Only high capacity precision ball bearings used.
- Accommodates any misalignment.
- 31 shaft sizes, ½" through 2 7/16".
- Interchangeable with most makes.

Send for Catalog PBC for complete details.

GREASE SEALED IN
DIRT SEALED OUT
with
FAMOUS SENTRI-SEAL



New Departure Pillow Blocks employ the performance-proved New Departure Type AE Adapter ball bearings with spherical O.D. for alignability and steel-reinforced Sentri-Seals for long life protection against dirt or grease leakage.



The bearings are easily applied to the shafting and are positively locked in position with an eccentric cam locking collar and set screw.

BALL BEARINGS MAKE GOOD PRODUCTS BETTER

NEW DEPARTURE • DIVISION OF GENERAL MOTORS • BRISTOL, CONN.

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PERFORMANCE
records unsurpassed
. . . backed by millions of
spindles equipped.

NEWEST
and latest developments
are standard equipment
with Pneumafil.

ECONOMICAL
to operate . . . virtually no
maintenance costs—
a rugged piece of machinery.

UNLIMITED
types and arrangements of
Pneumafil systems . . . engineered
for any fiber or mill condition.

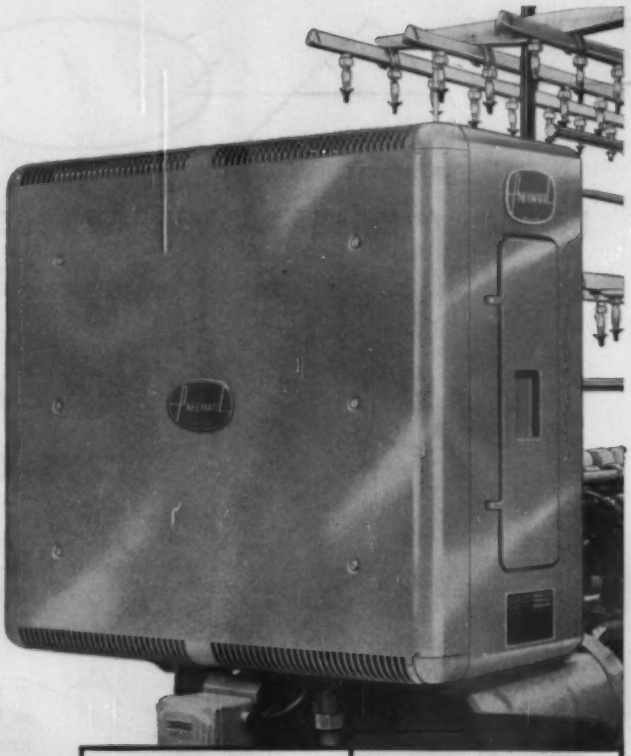
MILL MEN'S
practical ideas and valuable
suggestions are incorporated in
all Pneumafil equipment.

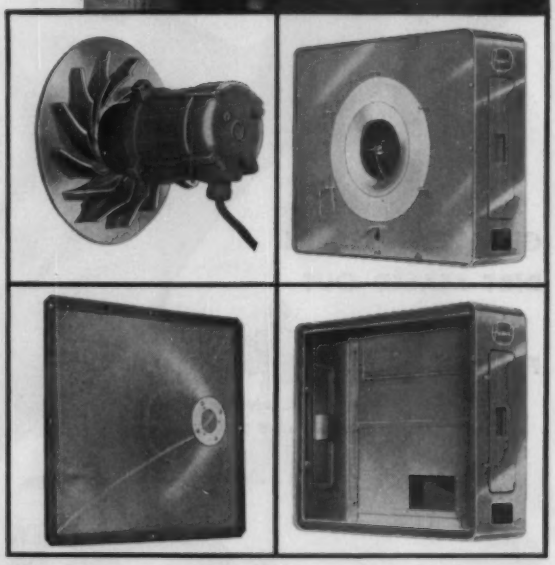
ADVANCED STYLING
and construction blends
in with today's modern
spinning processes.

FEWER ENDS DOWN—
Pneumafil's greater air quantity
keeps frames cleaner
and free of harmful waste.

IMPROVED YARN QUALITY—
Pneumafil's special "air flow"
pattern catches lint before
it becomes slubs.

LOWER SPINNING COST—®
Pneumafil's positive end pick-up and
superb cleaning means spinners can
operate more sides than ever before!





PNEUMAFIL CORPORATION
CHARLOTTE 8, NORTH CAROLINA
Atlanta, Georgia — Needham Heights, Mass.

PNEUMAFIL®

Pat. & Pats. Pend.—© 1957 Pneumafil Corp.

TEXTILE BUSINESS

Textile World

JUNE • 1957

THIS MONTH'S HIGHLIGHTS

First-Quarter Profits Improved

Freight Rates To Advance

Tire-Cord Use Is Booming

Cone Mills Broadens Products

"Common Markets" Hit Textiles

Textile Market Improves

Machinery Makers Diversify

Wool-Fabric Tariffs To Rise

The trigger point for wool-fabric imports was set late last month at 14,000,000 lbs. (about 28,000,000 sq. yds.) for 1957. Tariff rates will rise from 25% to 45% on imports beyond that volume.

Imports for the first five months hit 9,000,000 lbs.; so the quota should be reached by late August.

Mill Profits— On the Way up Again

Mill profits are on the way up again from the bottom they hit in the last quarter of 1956.

The rise has not carried to a point equal to the first 1956 quarter; but nearly half of the dip has been regained, according to early first-quarter operating statements now coming in.

Cotton and rayon mills, hit by poor prices and production cutbacks, shared in the improvement. Here's the record for five big producers:

	Net profit per share of common stock		
	1st Q. 1957	1st Q. 1956	4th Q. 1956
Burlington	42¢	47¢	41¢
Dan River	31	33	47
Erwin	34	47	33
Lowenstein	52	91	28
Reeves	44	41	12
Average	**40.6¢**	**51.8¢**	**32.2¢**

The average dip from the first quarter to the fourth quarter last year for these five companies was 19.6¢ per share of stock. By the end of March this year, they had regained 8.4¢ of that drop.

•

Similar improvement was shown by rayon producers.

At American Enka, "First-quarter earnings showed substantial recovery compared with the final quarter of last year." But like mills, Enka was down from a year ago—43¢ per share last quarter compared to 80¢ in the first quarter of last year.

Industrial Rayon followed the same down-and-up pattern: $1.40 in the first quarter last year, down to 23¢ in the last quarter, and back up to 50¢ in the first three months of this year.

•

Sales ran only slightly behind last year's first quarter for the companies from which statements are available.

Total sales for nine mills [table p. 18] were down from $173-million to $168-million, a drop of 2.5%.

Biggest sales drops by the nine companies occurred at Cone [p. 20] and Textiles, Inc., cotton-goods producers, and Phoenix Hosiery. Cone's sales were off 8.4% and profits 24.9%, Textiles, Inc.'s 8.5% and 34.1%. The drop at Phoenix was 8.1% in sales and a slide from $70,000 profit to a deficit of $39,000—the only deficit in 13 firms tabulated by net profits.

Others in the same fields did better. Indian Head, also a cotton-goods producer but much smaller than Cone and Textiles, Inc., increased its sales 6.9% and its profit from $17,000 in the first quarter of 1956 to $355,000 in the first quarter of this year.

Julius Kayser, hosiery and tricot producer, increased profits 68.8%; and Chadbourn Hosiery had a 9.1% increase (36 weeks) in profits on a 0.5% decrease in sales.

Carpet manufacturers continued their good performances. Bigelow-Sanford increased profits 1.9% on an increase of 0.9% in sales. Mohasco, on a 1.8% increase in sales, increased profits from $158,000 to $1,231,000. James Lees, the outstanding per-

First-Quarter Sales and Profits

	Sales ($000)		% Change	Net Profit after tax ($000)		% Change
	1957	1956		1957	1956	
Bigelow-Sanford	$20,764	$20,576	+0.9	$417	$409	+1.9
Burlington	.....	.....		3,216	3,853	−16.5
Chadbourn (36 wks.)	14,601	14,682	−0.5	204	187	+9.1
Cone	37,748	41,323	−8.4	1,037	1,381	−24.9
Indian Head	5,341	4,997	+6.9	355	17	+1,988.2
James Lees	20,010	19,599	+2.1	.....	.....	.....
Julius Kayser	.....	.....		493	292	+68.8
Kendall	24,674	25,235	−2.2	867	1,208	−28.3
Lowenstein	.....	.....		1,485	2,640	−43.7
Mohasco	28,780	28,262	+1.8	1,231	158	+679.1
Phoenix Hos.	1,915	2,085	−8.1	D 39	70	−155.7
Riegel	.....	.....		1,408	1,717	−17.9
Textiles, Inc.	14,956	16,358	−8.5	594	902	−34.1
Wayne Knitg.	.....	.....		197	202	−2.4
	$168,789	$173,117	−2.5%	$11,465	$13,036	−12.0%

D—deficit

former in the carpet field in late years, had a 2.1% increase in sales. Net profit slid 5.5%, from $1.08 per share of common stock to $1.02 per share.

Dan River, not tabulated, had a thumping increase in both sales ($24-million to $41-million) and profits ($0.9-million to $1.4-million). But operations in this year's first quarter included Dan River's acquisitions last year; therefore the figures are not comparable.

•

Sentiment that the low point has been passed and that the rest of 1957 will show better results is strong.

American Viscose, the country's largest supplier of rayon, expects further improvement in mills' use of rayon in both the second and third quarters and expects the whole year to equal 1956. (Viscose's first-quarter operations netted earnings of $0.85 per share of common stock, compared to $1.14 in the first quarter last year.)

Leon Lowenstein, chairman of the board of M. Lowenstein, reported to stockholders, "It appears that our company may be experiencing a reversal of the textile downward trend."

Freight Rates Going Up

Textile shippers can expect freight rates to jump starting around midsummer. Railroads are asking for as much as a 17% boost in rates, with chances good that they will get at least part of the increase. Trucks and waterways traditionally follow the railroad pattern in hiking rates.

Last fall the railroads asked the Interstate Commerce Commission to grant them a 15% hike in rates. Need for the increase, they told the ICC, stemmed from higher labor and equipment costs.

Pending a decision on the big rate boost, the ICC granted interim increases of 7% to Eastern roads and 5% to Western and Southern lines. But the railroads immediately added the interim boost to their original request; so now **the total increase**

Vinyl-Coated Fabrics Take Waterproof Market

Vinyl-coated fabrics, one of the fastest growing products in textiles, has chalked up a thumping 80% increase in the last five years. From 45.7-million yards in 1952, they hit 83.0-million in 1956.

Chief reason for the growth is better quality of the coatings and more emphasis on fitting them to specific end uses. Greatest increase has been in home furnishings.

These figures are not industry-wide, but they come from 26 firms that do the lion's share of this business. They are considered a dependable reflection of changing patterns by the Vinyl Fabrics Institute.

Vinyl-coateds have more than captured the total market increase. Total shipments of three waterproof products—vinyl-coated fabrics, pyroxylin-coated fabrics, and vinyl films—were up 19% in 1956 over 1952. Yardage increased from 133.7-million to 159.2-million.

Vinyl-coateds copped all of that 26-million-yard increase and took an additional 9-million yards from vinyl films and another 2-million yards from pyroxylin-coated fabrics.

Mills Go to Europe, Africa

Latin America is losing its preferred position for foreign expansion of U. S. textile mills and fiber producers to Europe and Africa.

Reasons: Europe and Africa offer better market and profit potentials, stable governments, and more-realistic business relations with governments and workers.

Some of the late moves are:

- **Burlington** will build a women's-hosiery mill in South Africa.
- **West Point** started production of tufted carpets last year in Manchester, England, and this month begins production of nonwoven fabrics there.
- **Berkshire Knitting** is establishing a mill in Northern Ireland.
- **Chemstrand** is also going into Northern Ireland.

Several other similar moves are being studied.

sought is 22% for Eastern and Western roads and 15% for Southern lines.

Regional hearings have been held around the country, with final arguments to come in Washington early this month. Guessing is that the railroads will get part of their request, most likely ending up with around a 15% total rate hike, including the interim increase already passed out. Eastern railroads may get a slightly higher increase.

Tire-Cord Use Is up— But Trouble Is Brewing

Sales of automobile tires may hit an all-time high this year. Tire manufacturers early in the first quarter were estimating shipments for the year at about 54.5-million, a 3% gain over the 53-million shipped in 1956.

But actual shipments so far this year have been at the rate of 58-million to 60-million. For the first quarter, shipments were 17% above the first quarter in 1956.

That means that tire cord is being used this year at the rate of about 139-million pounds a year and chafer fabric at the rate of 2.3-million pounds.

Reasons: the 1955 bumper crop of new cars is now needing tire replacements, and new-car production this year is holding up well.

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But there's an uneasy feeling about tires among both tire and auto manufacturers. Tires just aren't good enough now, and an avalanche of protest by motorists is building up.

The stark fact is that ordinary tires won't stand up under high-speed turnpike driving—and more turnpikes are being built every year.

Both tire and auto manufacturers admit that about 12,000 miles is the life of a tire driven at 75 mph. on the new turnpikes. On older, smoother roads, the same tire will last up to 30,000 miles.

With good highways and present high-speed cars, it's unrealistic to suppose that motorists are going to slow down to save tires. Therefore pressure is building up for tire improvement.

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Tire manufacturers are cagey about what moves they will have to make to improve tires, but the moves may be important to tire-cord mills. Redesign of tires may involve the use of different types of cord, or it may reduce the amount of cord.

For most motorists the trouble with present tires is that the rubber wears out too fast and leaves the tire slick. But for consistently high-speed drivers the rubber may tear loose from the cord in chunks.

The solution may lie in improving present rubber and strengthening or stabilizing tire fabric. Or it may lie in a change to butyl rubber, with less use of tire cord.

Bachmann Uxbridge Merged

Stockholders of Bachmann Uxbridge Worsted Corp. voted late last month to merge with Wardell Corp. and American Hard Rubber Co. The new firm will be called Amerace Corp.

In late years the only successful company of the three has been American Hard Rubber Co. From 1952 through last year, it showed a profit every year; and profits for the five years totaled $2,817,759.

Bachmann Uxbridge made money only in one of those five years: $272,340 in 1953. In the other four years it lost a total of $3,781,073.

Wardell had a $45,765 loss in 1954, a $42,864 profit in 1955, and a $70,559 profit in 1956. That profit and loss was on assets; the company has done no business since 1953.

Book values of the three are:

Bachmann	$13,575,000
A H R	11,384,000
Wardell	5,406,000

The present president of American Hard Rubber, Victor T. Norton, will be president of Amerace. Harold J. Walter, present president of Bachmann Uxbridge, will be vice president of Amerace.

Textile Market Improves

Optimism for 1957 business rose steadily last month.

Besides better first-quarter profits than were expected ["Mill Profits—on the Way up Again," p. 17], prices generally resisted further downward pressure and even moved up in the face of lagging sales in some constructions.

- **Woolen and worsted price hikes** spread to more mills and more lines of fabrics. They started in April in suitings and last month were being extended across the board. Most increases ranged from 10% to 20%.
- **Cotton-goods prices,** particularly print cloths that have been under pressure for months, firmed to the extent that mills were not willing to sell below official price quotations.
- **Chambrays and denims** were steady at year-ago prices.
- **Synthetics** were firm in the face of declining inventories.

Bates and TWUA Clash

Bates Mfg. Co. and TWUA met head on last month in an arbitration clash over wages. Decision is expected early this month from impartial arbitrator James Healy of the Harvard School of Business Administration.

TWUA, anxious to demonstrate the justice and necessity of contract improvements, did not waver from its original bid for a 5¢-an-hour increase.

Bates stuck to its demand for wage equalization with the South, which, Bates maintained, meant cuts in wages and fringe benefits amounting to 14¢ an hour.

Wages at Bates now average $1.40 an hour, but fringe benefits bring the total to $1.58, Bates says.

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Arbitration was held May 10, and both sides were given time to file reply briefs.

Pattern-setter Berkshire Hathaway settled with TWUA in April on the basis of no direct wage increase but small increases in fringe benefits. But arbitration talks are tied to direct wage issues only; so the Berkshire Hathaway pattern was out.

Bates will attempt to keep its big York Div. at Saco, Me., in operation if it gets enough wage relief. Otherwise it will close the doors, as it has already done at the Androscoggin Mill in Lewiston.

If York goes, Bates will have only three Maine divisions: Bates and Hill at Lewiston and Edwards at Augusta.

Auto Fabrics Spurt Again

Use of automotive fabrics took another spurt upward over last year's rate in the early weeks of last month.

By the middle of May auto production was running 21% over the same weeks in 1956.

In the first 4½ months of this year, total car production was 2.8% above 1956—2,664,443 built this year against 2,590,544 built last year.

Patterns set earlier by this year's models are still holding up.

Among the Big Three producers,

Cone Mills — A Giant's Stride Increases

CEASAR CONE: "Break with a 66-year tradition that's paid off? Nothing doing!"

Cone Mills Corp. this year lengthened its normal giant's stride by continuing the expansion program that has made it one of the country's biggest textile organizations. In the first quarter it—

- Started up a new $10-million finishing plant at Carlisle, S. C.
- Acquired control of Cortley Fabrics Co. and its affiliates Clarion Textile Corp. and Clarebloom Cottons, Inc.
- Added styled knit goods to the line of play-clothes fabrics handled by its selling house Cone Mills, Inc.

These moves fit snugly into Cone's past pattern of extending both its production and merchandising facilities. But the addition of knit goods marks a new step for Cone; and the acquisition of Cortley, a converter of high-style cotton goods, puts Cone a step further in a field it entered only a few years ago.

•

Spearheading the Cone operation in these moves is Ceasar Cone, dynamic young president of Cone Mills Corp. since February, 1956, when he took over at the death of his brother Herman.

Starting in 1930 with the Cone Export & Commission Co. (now Cone Mills, Inc.) Ceasar Cone spent 15 years merchandising Cone Mills products. In 1945 a company reorganization took him off the road and put him in the job of treasurer of Cone Mills Corp., the producing unit that owns the selling house Cone Mills, Inc.

Flanking Ceasar at the top of the Cone organization are brothers Benjamin and Sidney.

This top-management brother combination is another tradition at Cone. The company was started by two brothers, Moses H. and Caesar, and it's been run by Cone brothers ever since.

•

Cone Mills Corp. began as the Cone Export & Commission Co. in 1891, when Moses and Caesar lined up 38 of 44 mills producing a cheap fabric called "Southern plaids." With five-year contracts to act as selling agents for the mills, the brothers started the

production and merchandising policy the company has followed ever since: "Make it good, make it cheap—and sell the hell out of it."

In short order the brothers had the mills producing ginghams, drills, denims, chambrays, and tickings in addition to the Southern plaids.

Four years later, in 1895, they built a mill of their own: Proximity Mfg. Co., in Greensboro. In another four years they bought the cotton-flannel producer, Revolution Cotton Mill, and in 1905 built the world's largest denim mill, the 3,000-loom White Oak Mill.

These were pioneering years—years in which Cone and other young textile companies now grown into household names began to make fabrics in the South that Northern mill men said were impossible to make outside of New England.

But Cone took it a step further by going into finishing. In 1913 it acquired Proximity Print Works, now called Cone Finishing Co.

The next year, 1914, was a red-letter year in the corporate life of Cone. It paid its first dividend that year and hasn't missed a payment since.

By the end of World War II Cone owned or operated 17 mills and acted as selling agent for two others. It then began a period of rapid expansion by acquisition that involved the expenditure of $35-million.

Additions included Edna Mills, Reidsville, N. C.; Pineville Mill, Pineville, N. C.; and Dwight Mfg. Co., Gadsden, Ala.

●

Another important milestone was reached by Cone in 1951.

Sales had hit $150-million, and the company was operating 20 plants and employing 16,000 people. The corporate structure was becoming too complex; so another corporate consolidation took place.

Cone bought out minority stockholders in mills in which it had an interest but were not part of Cone Mills Corp. A new public offering of Cone stock was made, and the stock was placed on the New York Stock Exchange. Cone Finishing Co. and Cone Mills, Inc., remained as wholly owned subsidiaries; and Union Bleachery, Greenville, S. C., was bought in 1952.

Capitalization now stands:

Preferred stock, 4% cumulative (shares)	219,000
Common stock, $10 par (shares)	3,436,000
Long-term debt	$14,994,000
Working capital	$59,500,000
Book value per share of common stock	$30.46

Like most cotton mills, Cone has not enjoyed lush earnings in late years. In the last 10 years, its lowest earnings prior to 1954 came in 1952. That year, earnings per share of common stock was $2.27, compared with $4.07 in 1950 and $5.16 in 1948.

The record since 1953 is:

1954—$0.82
1955— 1.35
1956— 1.53

●

A new take-off in merchandising in 1951 set Cone on the trail that led to the acquisition this year of Cortley Fabrics Co.: Cone decided to merchandise its products directly to consumers.

The first move was a national promotion of Cone products to

General Motors is down from 54.5% of the market to 46.2%, Ford up from 26.6% to 30.4%, and Chrysler up from 14.7% to 20.9%.

Studebaker slipped from 2.0% of the market to 1.1% and American Motors from 2.1% to 1.5%.

Machine Makers Diversify

Diversification is paying off for textile-machinery manufacturers.

Cycles in textile markets have long been a thorn in their sides, and for some years they have been on the lookout for opportunities of growing.

Last year nontextile business hit better than 35% of sales volume and as much as 50% of earnings for some of the big manufacturers.

Here's how they've broadened:

- **Crompton & Knowles Corp.:** Half of last year's earnings were tied to the nontextile operations Althouse Chemical Co., Wrap-King Corp., and Carl N. Beetle Plastics Corp.

C & K has dropped "Loom Works" from its corporate name as evidence of broader interests.

- **Draper Corp.** maintains a separate division to bring outside work into its sprawling foundry at Hopedale, Mass. It also owns Titan Chain Saws and Penfield Saw Works, and it is now a major factor in knitting machinery through the purchase of Jacquard, Wildman, and Hemphill knitting-machine companies.
- **Saco-Lowell Shops'** percentage of nontextile sales jumped from zero in 1951 to a high of 40% in 1953. Last year it dropped back to 12% but is likely to increase again this year as a result of Saco-Lowell's new trademarked automobile mufflers and its recent affiliation with Elliott Addressing Machine Co.
- **Universal Winding Co.'s** big nontextile operation is in coil-winding machinery for the electrical industry. Sales are being maintained at a high rate and are expected to increase.

But Universal also expanded its textile operation by taking on the sales of Brush Electronic's testers.

- **Whitin Machine Works** pushed nontextile sales to about 25% of its income last year. High hopes are held for its Business Equipment Corp. and Harvey-Wells Electronics.

consumers. Of the first $1-million budget, over $600,000 went for consumer advertising, and $500,000 of that was on Cone's terry towels.

Next came a switch of work-clothes fabrics, always Cone's bread and butter, to play-time uses. Cone denims—in softer finishes, pastel colors, and good styling—invaded the women's-wear field.

When women's tastes switched from "sports denims" two or three years ago, Cone sought other means for holding its 30% of the denim market. The latest denim promotion is the current "Prints of Denim" campaign beamed at mothers in an effort to clothe children in Cone's denims.

In 1955 the promotion tempo was stepped up. High-style women's magazines such as Vogue, Harper's Bazaar, Mademoiselle, Seventeen, and others began to carry ads on Cone's corduroys, play denims, and other fabrics in matching or complementary colors.

And the addition this year of knit goods to its fashion lines and the acquisition of Cortley Fabrics broaden Cone's styling capacity and sales contacts.

●

Where does Cone go from here?

It obviously keeps traveling the same road. Basically the present Cone brothers are operating by the same rules as the original brothers: "Make it good, make it cheap—and sell the hell out of it."

In 1957, Ceasar, Ben, and Sid Cone are only doing a modern version of what Moses and Caesar did in the 1890's and early 1900's: upgrading their products and broadening their sales bases.

But like a true textile man, Ceasar Cone bemoans the cyclical nature of textile business and the "right now" in particular.

"Sure, we want to sell more goods," he says. "But right now we'd like to make a little profit on what we do sell."

Textile Stocks See-Saw

Nine textile stocks listed on the New York Stock Exchange showed changes from April 4 to May 24 ranging from a gain of 13.9% by Reeves to a loss of 4.8% by James Lees. On average, the group rose 2.9% and returned almost to its Jan. 3 level.

	Apr. 4	May 24	% Change
American Viscose	35	38¾	+10.7
Burlington	11⅜	12	+ 5.6
Cone	13⅜	13½	+ 1.0
Dan River	11¼	11¼	
Jas. Lees	36¼	34½	— 4.8
Lowenstein	19⅛	21	+ 9.8
Pacific	29	28	— 3.5
Reeves	9	10¼	+13.9
J. P. Stevens	21¼	21¼	
Average	20.61	21.18	+ 2.9

Although mill profits are expected to improve in later quarters, most textile-stock observers do not consider the present rise the beginning of a significant, continuous climb.

Cuba Wants Control

The Cuban textile-workers union has come up with a plan to do away with "ruinous competition": a government bureau that would control production, distribution, and prices of textile products for domestic consumption and for export.

"Businessmen have proved incapable of curing the industry's chronic ills. Now it is the duty of the State to consolidate industry," the union says.

Glendale Folds in Georgia

Glendale Mills, Douglasville, Ga., a 33,000-spindle print-cloth mill, will be liquidated in the next few weeks. Full-scale operations stopped a few days ago, and stock will be run out this month.

Selling agents Thackston & Redding of Spartanburg, S. C., say they'll try to sell it as a going concern but will auction it piecemeal if there are no takers.

Fewer New Homes Started

Prospects for textile home furnishings tied to new-home construction showed little improvement as early second-quarter reports came in on new housing starts.

The first month of the quarter, April, improved over March; and it was the first month since last October that showed an upturn over the previous month.

But for the first four months of this year, new starts ran 17% below the first four months of last year—303,000 units started this year against 363,500 last year.

Estimates now are that starts this year will drop below 1-million.

Many observers consider lower home construction a good omen for the textile industry. Their reasoning: the less spent by consumers on housing, new automobiles, and other durable goods, the more they'll spend on textiles.

Mills running home-furnishings fabrics probably won't agree. Curtains, rugs, and upholstery fabrics

"Common Market" Idea Hits Seven World Areas

The snowballing "common market" movement started early last year in Western Europe hit Japan last month. The Japanese Ministry of Trade & Industry appointed a group to study the possibilities of a free-Asian common market.

That brings the total to at least seven world areas where common-market deals are cooking.

When the historic sterling bloc of the British Empire and the tightly controlled markets of the Communist countries are added, it puts most of the world in preferred-market groups extending beyond national boundaries.

These markets could have important effects on the U. S. textile industry and the world textile-markets patterns.

Three types of areas are involved: countries that are important textile exporters (Western Europe and Japan), countries that are primarily textile importers (Central America and British West Indies), and areas containing both exporting and importing countries (Latin America, Western Mediterranean, and Scandinavia).

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The keys to the common-market arrangement are the removal of trade barriers and a gradual move toward planned, integrated production among the participating countries.

Textiles are certain to enter heavily into the plans of every common-market area. The pattern is likely to be textile sufficiency for the area first, and then exports. In most cases, the area will be large enough to support a varied textile industry.

Result: export markets for countries outside the common market will be few and highly specialized. It's likely also that larger-scale subsidies will enter the picture on textile exports from some of the common markets.

●

But familiar textile problems are popping up in common-market countries.

Western Europe is trying to pull England into that market, but British textile mills are not anxious to join up as matters now stand.

Probably no group is better versed in export-import business than British textile men, and they're asking for strong guarantees about such old problems as dumping, dual pricing, subsidies, and country-of-origin definitions.

Japanese mills will fare better in an Asian market than British mills are likely to in the Western European market. About all an Asian market would amount to would be that Japanese mills would have a protected market for textiles in return for Japan importing other products from her neighbors. "Planned, integrated production" would have little room for a textile industry in other nearby countries because of the present excess capacity of Japan's industry.

get their greatest boost from consumers changing dwellings.

Although sales of these textiles are not in direct proportion to new-home construction, there's no question that there is a relationship.

Detroit Consumers Prefer These Textiles—

Textile consumers in Detroit are showing strong patterns in their purchases of textiles for personal and home use.

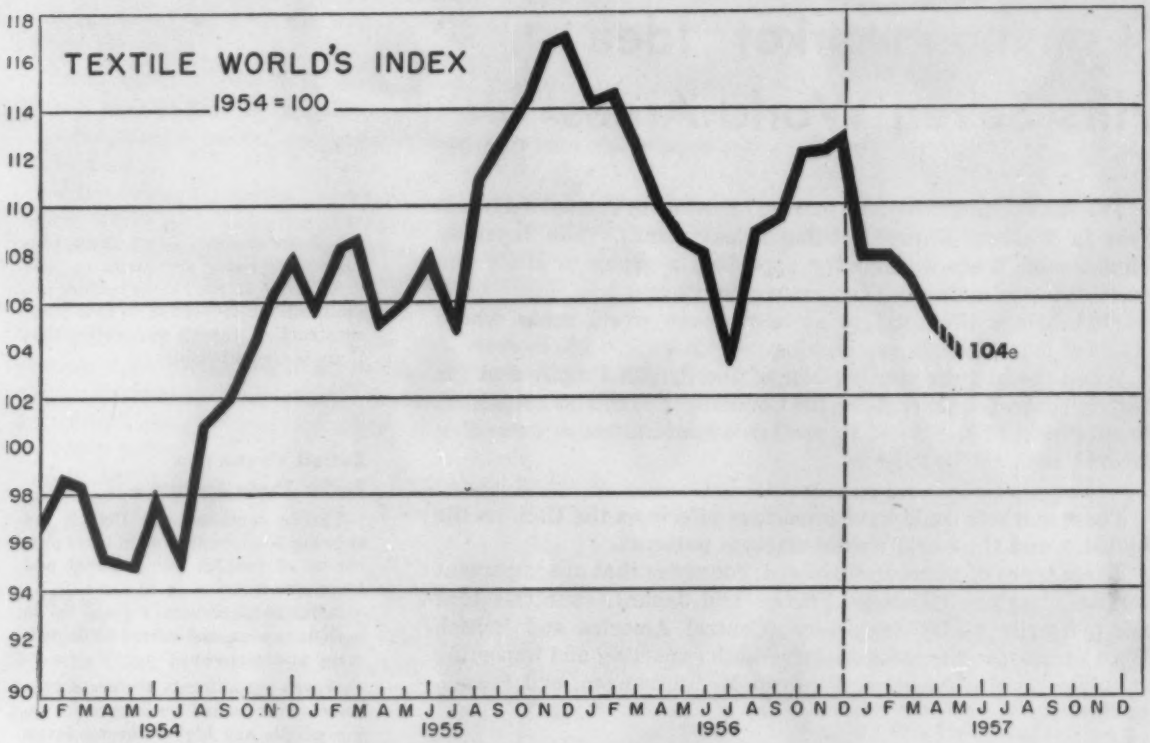
A roundup of what's going on in both downtown and suburban department stores shows:

- **Woven carpeting is preferred** two-to-one over tufted by buyers in upper-middle and higher income levels and young married couples at all income levels.

Buyers with lower incomes and older people at all income levels have swung more sharply toward tufted carpeting.

Preference for fiber in tufteds has steadily shifted from wool to solution-dyed rayon, nylon, and rayon-nylon mixtures. Synthetics now account for about 60% of the tufted carpeting sold in the lower-price department stores.

- **The colors most in demand** in both woven and tufted carpeting are solid pastels, with beige outselling all others at all price levels. Dark colors are out, tweeds and "wood tones" are gaining, and solid whites remain one of the "most-asked-for-colors."
- **Wall-to-wall carpeting** is brought by 80% to 90% of Detroit carpeting customers, department stores report. Reason: Detroit is a city of homeowners rather than apartment-dwellers, and they don't move often. Room-size rugs are usually preferred by families that move frequently.
- **Ease-of-care garments** are causing a strong switch from older conventional fabrics among Detroit women. Dacron-cotton blends are the favorite for blouses, dresses, and summer sportswear.
- **Tweeds, particularly in wool and silk mixtures,** are in strong preference because of their casual and bulky look.



Index of manhours worked in the textile industry adjusted for changes in productivity

Textile World's Monthly Indicators

	Latest Month	Previous Month	Year Ago
Textile World's Index (1954=100)	**104**	**105**	**109**
Employment (thousands) B.L.S.	1002	1012	1061
Production Workers (thousands) B.L.S.	912	922	971
Weekly Earnings B.L.S.	$57.75	$58.20	$56.20
Hourly Earnings B.L.S.	$1.50	$1.50	$1.43
Weekly Hours Worked B.L.S.	38.5	38.8	39.3
Production Index (1947-1949=100) F.R.B.	106	105	110
Wholesale Price Index (1947-1949=100) B.L.S.	95.4	95.4	95.1
Manufacturers' Sales (million $) Commerce	1120	1191	1123
Manufacturers' Inventories (million $) Commerce	2614	2655	2457
Inventories to Sales Ratio	2.33	2.24	2.19
Exports (million $) Commerce	173.7	175.3	72.2
Imports (million $) Commerce	77.2	98.4	95.3
Stock Price Index (1941-43=10) Standard & Poor's	21.56	21.29	25.83
Failures (number) Dun and Bradstreet	7	13	5

National Economic Indicators

	Latest Month	Previous Month	Year Ago
Industrial Production (1947-1949=100) F.R.B.	145	146	143
Consumer Prices (1947-1949=100) B.L.S.	118.9	118.7	114.7
Wholesale prices (1947-1949=100) B.L.S.	117.2	116.9	113.6
Population (millions) Census	167.7	167.5	164.6
Unemployment (thousands) Census	2.5	2.7	2.6
Employment (millions) Census	64.5	64.0	64.0
Personal Income (billion $) Commerce	339.3	338.1	321.7

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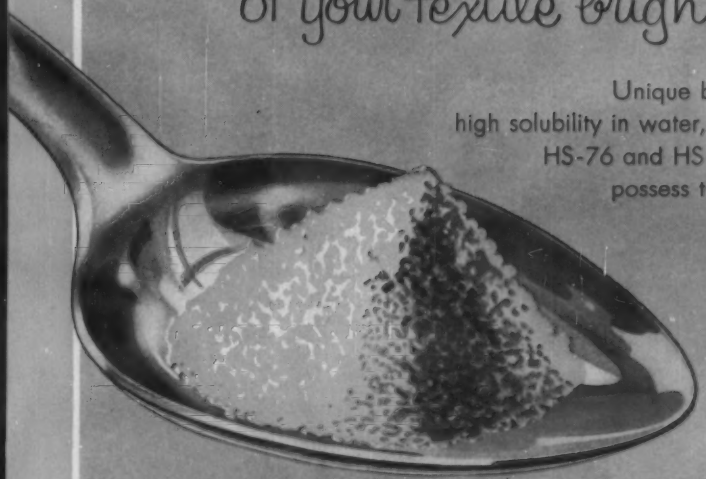
for the "Easy Solution" of your textile brightening problems...



Unique because of their exceptionally high solubility in water, BLANCOPHOR HS-71, HS-76 and HS-31 optical whitening agents possess these quality features:

* Recommended for pad or mangle application on cotton and rayon fabrics.
* Work well alone or together with usual finishing ingredients—resins, starches, fillers, softeners, etc.
* Produce clear, brilliant whites on bleached textiles.
* Outstanding in their level dyeing properties.
* Suitable for use in all types of equipment, such as jigs, reel or package machine.

THE POWDER FORM

BLANCOPHOR HS-71 and HS-76

THE NEW LIQUID FORM

BLANCOPHOR HS-31

BLANCOPHOR HS-31, the new liquid form, is easy to use—there's no need to dissolve powders.

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How Dayco Rub Aprons reduce card downtime

. . . improve yarn uniformity

With downtime on a 60" card costing an average of $25 an hour, mills report new Dayco Rub Aprons are saving really substantial amounts every month. They completely eliminate the time formerly lost in oiling ordinary aprons.

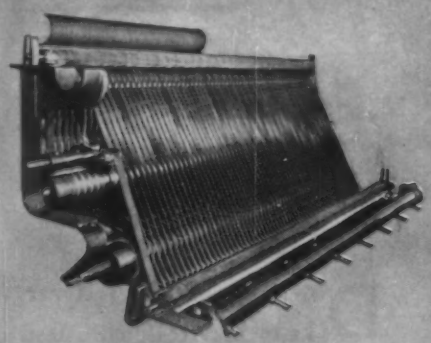
Because Dayco Rub Aprons are made of the finest synthetic rubber compounds, they require *absolutely no oiling*. Since most mills oil ordinary aprons every time cards are stripped, this eliminates many hours of card downtime.

Actually Dayco Rub Aprons reduce downtime enough to pay for themselves in just a few months.

Yarn uniformity immediately improves with Dayco Rub Aprons on your cards. Special compounding gives a higher, longer lasting coefficient of friction. New 2-Ply rubber impregnated, reinforced fabric construction reduces eccentric motion as much as 33%. Perfectly concentric, Dayco Rub Aprons hug rolls tightly for constant, even traction. Result: greater control of yarn density for vastly improved quality and uniformity.

Compounded to resist emulsion oils, Dayco Rub Aprons do not "grow," nor are they affected by temperature or humidity. Improved end construction grips buttons tightly. All these add up to long, trouble-free service.

Your Dayco Representative will stop to see you soon. Ask him for the details on all the money-saving features of Dayco Rub Aprons. Or write The Dayton Rubber Co., Textile Div., 401 S. C. National Bank Bldg., Greenville, S. C.



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Features offering additional savings . . . greater card efficiency:

- No stretch—little need for take-ups
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- Unaffected by oil or static
- Will not crack, economical, efficient

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B.F.Goodrich Chemical *raw materials*

denims in with whites?

Yes...Hycar-treated denims are colorfast

DENIMS sized with Hycar Latex are really colorfast —even in the first laundering. They can be washed along with fine white fabrics with no danger of discoloration.

The greater durability of Hycar-sized denims also makes a big hit with users. Tests made under Federal Specifications CCC-T-191-B show that sizes made from Hycar Latex dispersions increase wear resistance of cottons as much as 300% more than starch sizes. This strength is maintained during repeated launderings.

For further information write Dept. HE-3, B. F. Goodrich Chemical Company, 3135 Euclid Avenue, Cleveland 15, Ohio. Cable address: Goodchemco. In Canada: Kitchener, Ontario.

USE HYCAR LATEX HERE FOR BETTER TEXTILE PROPERTIES

Warp size . . . lasting abrasion resistance for cotton, rayon, denim
Aftertreatment . . . reduced crock, improved wear life
Dye Bath . . . more uniform colors
Starch Blend . . . improved rayon seam strength
Resin Blend . . . greater crease resistance in cotton, rayon
Bonding Material . . . for non-woven fabrics, screen printing inks

Hycar
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American Latex

B.F.Goodrich Chemical Company
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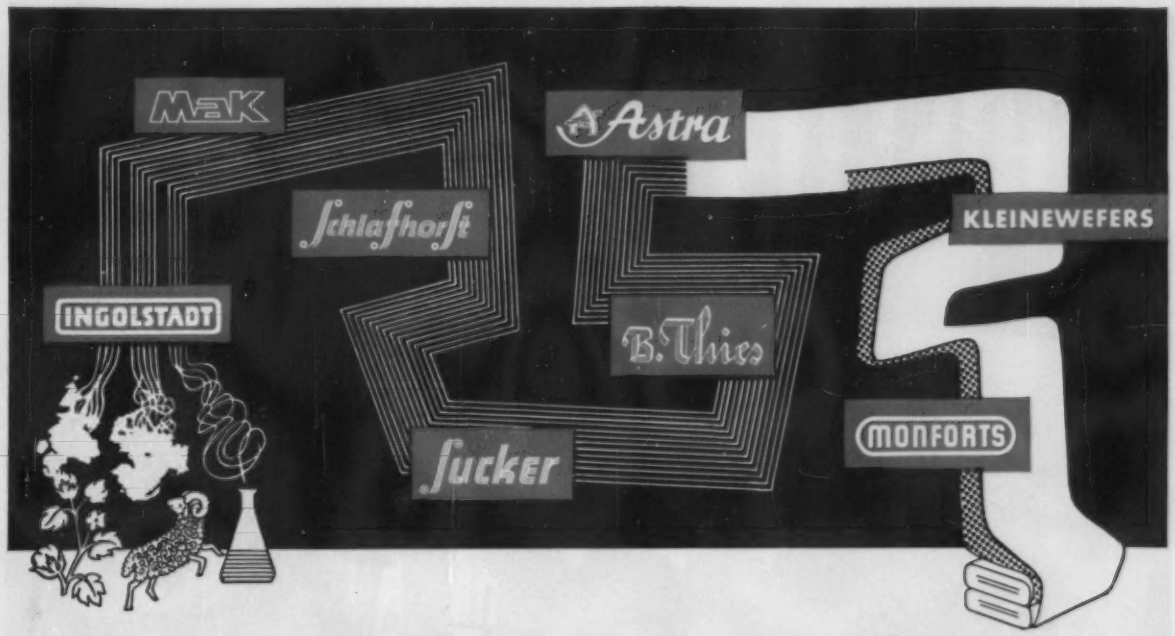
B.F.Goodrich GEON polyvinyl materials • HYCAR American rubber and latex • GOOD-RITE chemicals and plasticizers • HARMON colors



From the fibre to the finished fabric

UNIONMATEX *advises you, plans expertly and delivers*

textile machinery for your new projects, mill additions and mill modernisation

INGOLSTADT Spinning Machinery for cotton, artificial staple-fibre and worsted
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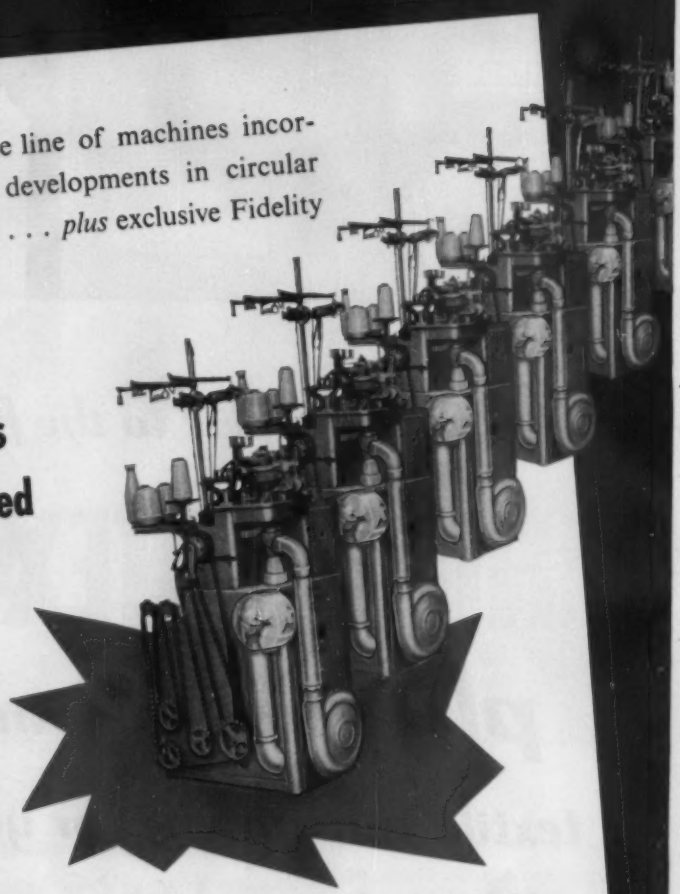
Only Fidelity offers a complete line of machines incorporating *all* the outstanding developments in circular knit hosiery equipment design . . . *plus* exclusive Fidelity electronic control!



- **400 or 474 Needles**
- **Single or Double Feed**
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- **Plain, Mesh or S-T-R-E-T-C-H**
- **Individual Motor Drive with . . .**
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You select the performance features *you* want . . . when you select a Fidelity. See the *complete* Fidelity line in operation at our showrooms . . . or write for stocking samples today.

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SPINNING MACHINERY FROM INGOLSTADT THROUGHOUT THE WORLD!

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FOR COTTON · ARTIFICIAL STAPLE FIBRE AND WORSTED

Planning and supply of complete spinning plants based
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Spares for spinning machinery · Conversions of draft systems

DEUTSCHER SPINNEREIMASCHINENBAU INGOLSTADT *Ingolstadt/Donau* GERMANY

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Smooth drafting action of Accotex Aprons gives good yarn control, top-quality spinning

Top-quality spinning—shift after shift—depends on a lot of different things. The right kind of apron, for example, can make a big difference in yarn quality. That's why hundreds of mills have standardized on Armstrong Accotex® Aprons.

There are many good reasons for this. One of the most important is that these aprons—like the equipment they run on—are precision made. They're specially engineered to provide the smooth drafting action and good yarn control essential to high-quality spinning.

The special synthetic rubber compounds used in Accotex Aprons are another reason. In the Accotex NO-7075 black-and-white apron, for example, there are different rubber compounds on the inner and outer surfaces.

The white inner face has a relatively low coefficient of friction to avoid buckling and jamming at the pin, yet it has enough friction to grip the drive roll firmly to assure smooth, even drafting. Special electrolytes added to this compound help to prevent the accumulation of loose fibers inside the apron.

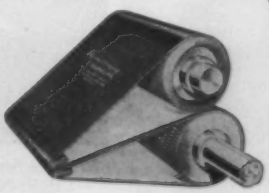
The black outer surface is specially compounded to resist abrasion and tearing and has sufficient friction to keep the top apron spinning smoothly without slipping.

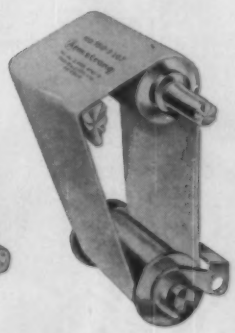
There's an Armstrong Accotex Apron specially designed to give you top-quality spinning on any type of single- or double-apron high-draft frame. If you're not already using Accotex Aprons, ask your Armstrong man to arrange a test next time he calls. Prove in your own mill what a big difference in yarn quality these aprons can make.

For more information on Accotex Aprons or other Armstrong textile supplies, write to Armstrong Cork Company, Industrial Division, 6406 Dauphin Street, Lancaster, Pa.

Armstrong ACCOTEX APRONS

. . . used wherever performance counts





Accotex NO-7075 Aprons give you long, trouble-free operation on all types of double-apron frames. Superflexible NO-750 Apron insures smooth drafting action and good yarn control on single-apron equipment.

SEVEN WONDERS OF THE

. . . developed with the help of the World's Greatest Lubrication Knowledge!

A giant wind tunnel that "flies" jets at supersonic speeds . . . a submarine that runs on nuclear power . . . a machine that makes genuine diamonds. These are some of the scientific wonders pictured on these pages. Each one is *the first of its kind*—designed to add to man's knowledge of the world around him. And each was developed with the help of Socony Mobil's vast lubrication knowledge.

When new machines are being planned . . . when unknown problems of lubrication lie ahead —machine builders and machine operators have found it pays to call on Socony Mobil.

Whatever *your* lubrication problems, large or small, we're ready to help you solve them . . . to improve your production, reduce costs through a program of *Correct Lubrication*.

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FIRST STEP IN CUTTING COSTS

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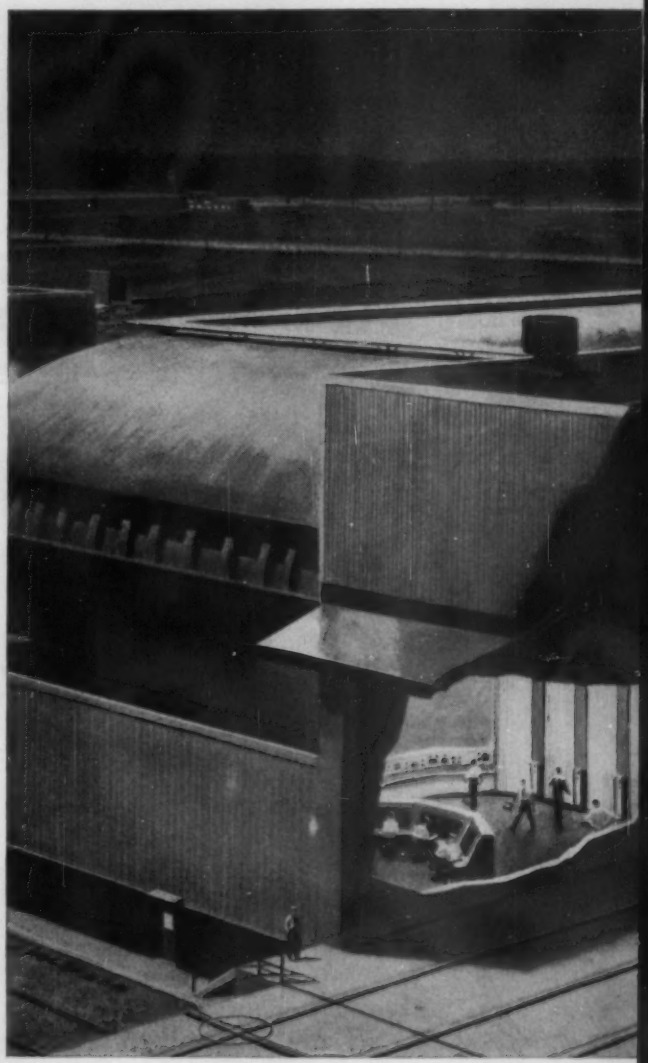
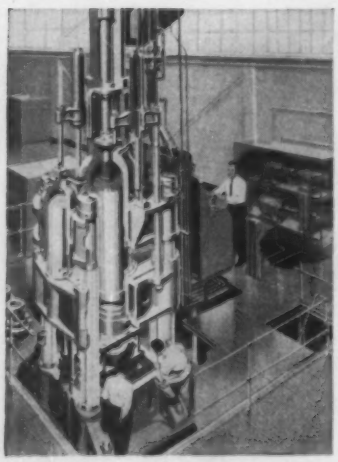
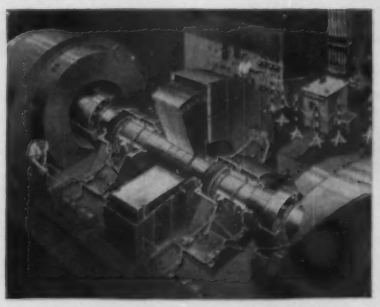




World's first atomic-powered submarine —U.S.S. Nautilus travels on power generated by fissionable material.

World's only diamond-making machine —develops up to 1,500,000 lbs. pressure and 5000°F. temperatures to create genuine diamonds.



Giant atomic accelerator—the Cosmotron at Brookhaven National Laboratory is powered by a Mobil lubricated Westinghouse Motor Generator.

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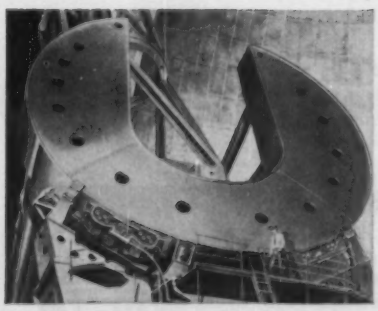
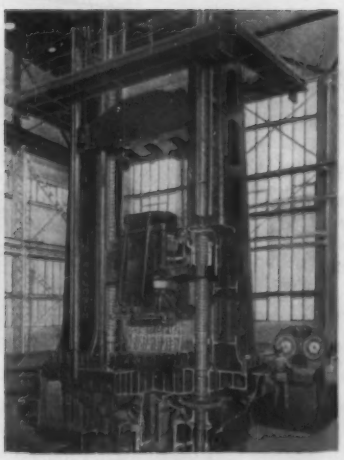
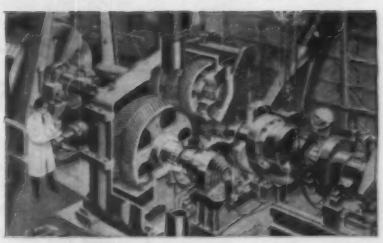
SCIENTIFIC WORLD

World's most powerful wind tunnel—largest of its type, at the U. S. Air Force's Arnold Engineering Development Center, is powered by motor-driven compressor system that is largest rotating mass ever built. Typical tests will involve new fighters equipped with modern jet engines like the Pratt & Whitney J-57 shown here.



World's largest telescope at Mount Palomar Observatory has 200" lens, weighs 500 tons. It floats on microscopic film of Mobil D.T.E. Oil.





World's largest dynamometer tests brake materials under varying pressures, speeds and temperatures. 200-ton machine is 100% Mobil protected.

World's largest testing machine can apply a tensile or compressive force of up to 5,000,000 lbs. to test full-scale sections or complete units of every type.

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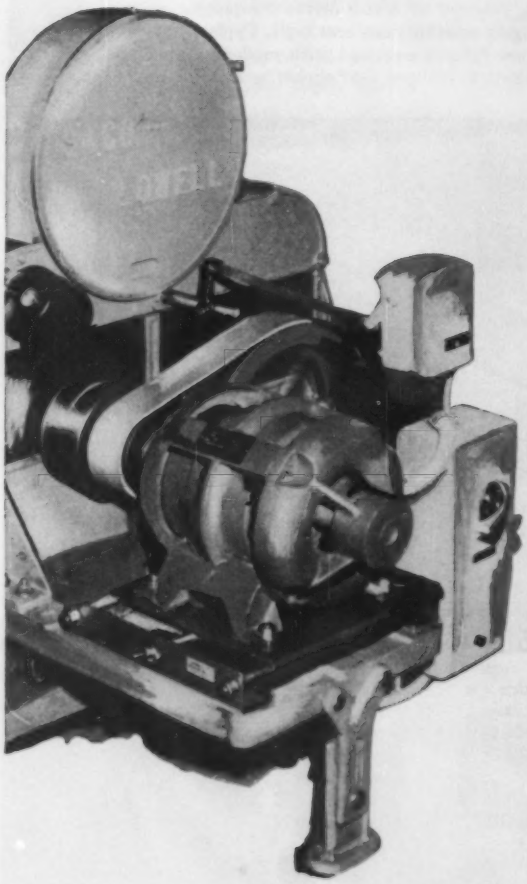
What other belting in your mill can meet all these drive conditions?



DRIVES WHERE YOU NEED MORE CAPACITY

Tannate with its high overload capacity is the economical way to get more production from your present equipment and, you'll make savings in power costs, too. It's the glove-like grip and higher tensile strength of Tannate that enables it to outproduce and outlast the ordinary belt. Try it and see for yourself.

DRIVES SUBJECTED TO HEAVY SHOCK LOADS

Tannate is resilient, absorbs heavy shock loads and acts as a cushion between motor and machine. This extra strength, built into Tannate flat leather belts, means longer service life—less maintenance, too.

HIGH SPEED DRIVES

where belt speeds as high as 6000 f.p.m. are required. Tannate can do a good job because it is comparatively light in weight—consequently centrifugal force has less effect—the power transmitting efficiency of Tannate is maintained.

MULTIPLE PULLEY DRIVES

Tannate is flexible—can take the twisting and turning of serpentine drives, mule drives and quarter turn drives. In addition, Tannate has the necessary high coefficient of friction (on both sides of the belt) to maintain high operating efficiency on the tough drives.

SHORT CENTER AS WELL AS LONG CENTER DRIVES

The superiority of Tannate on long center drives is almost taken for granted by many plant engineers today—but don't overlook the advantages of Tannate on short center drives, too. While the Tannate short center drive usually does require a tension-controlling motor base for best performance, it is equally true that this simple sturdy drive will be more efficient—do a better job, require less maintenance and last much longer than ordinary short center drives.

What is Tannate?

Tannate is the trade name for the special tanned leather developed and produced by J. E. Rhoads and Sons especially for the manufacture of flat leather belting. It combines exceptional grip, pliability, elasticity, strength, and durability. It will resist moisture, mineral oils and the fumes of most acids—will withstand high temperatures (212°F. dry, 170°F. moist). For specifications of Tannate flat leather belting and Rhoads' other leather products, write J. E. Rhoads and Sons, 2100 W. 11th Street, Wilmington 99, Delaware.

RHOADS

INDUSTRIAL LEATHERS

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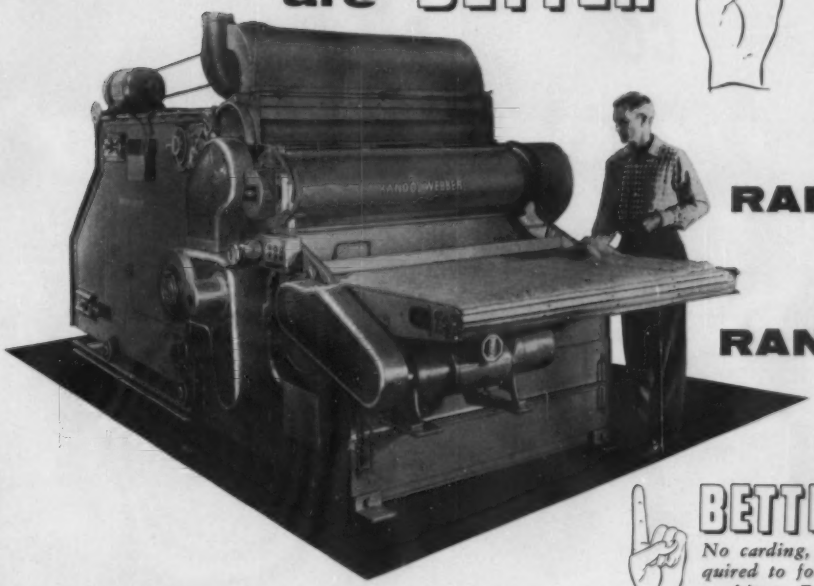
Non-woven fabrics

are BETTER 4-WAYS



made on

RANDO-FEEDER®

and

RANDO-WEBBER®

BETTER Equipment

No carding, garnetting or lapping equipment is required to form the RANDO-WEB. Only one pair of machines—RANDO-FEEDER and RANDO-WEBBER—is needed to make non-oriented webs. These efficient, low-maintenance machines are shipped assembled in 40", 60" and 84" widths.

BETTER Production Time

The versatile RANDO-FEEDER and RANDO-WEBBER produce webs of desired thickness. Production range (40" machine) is from approximately 30 to over 300 pounds per hour. Finished webs can be wet or dry bonded, dyed or printed like woven goods.

BETTER and Wider Range of Engineered Fabrics

A wide variety of fibers, natural and synthetic, blends, and waste, can be made into a RANDO-WEB. It is remarkable what uniform webs, lengthwise and crosswise, these machines make using staple fibers, processing and recovered wastes.

BETTER Finished Products

The RANDO-WEBS produced are suitable for further processing into felts, waddings, heavy mats and engineered non-woven fabrics. Fabrics, filters, surgical goods, wiping cloths and many other products are now being commercially produced.

WRITE Complete details in new Bulletin No. 105.

EXPORT REPRESENTATIVE:
Lendt & Company, 535 Fifth Ave., New York 17, N. Y.

SOUTHERN REPRESENTATIVE:
Parrott & Ballentine
510 South Carolina, National Bank Bldg., Greenville, S. C.

TEXTILE DIVISION
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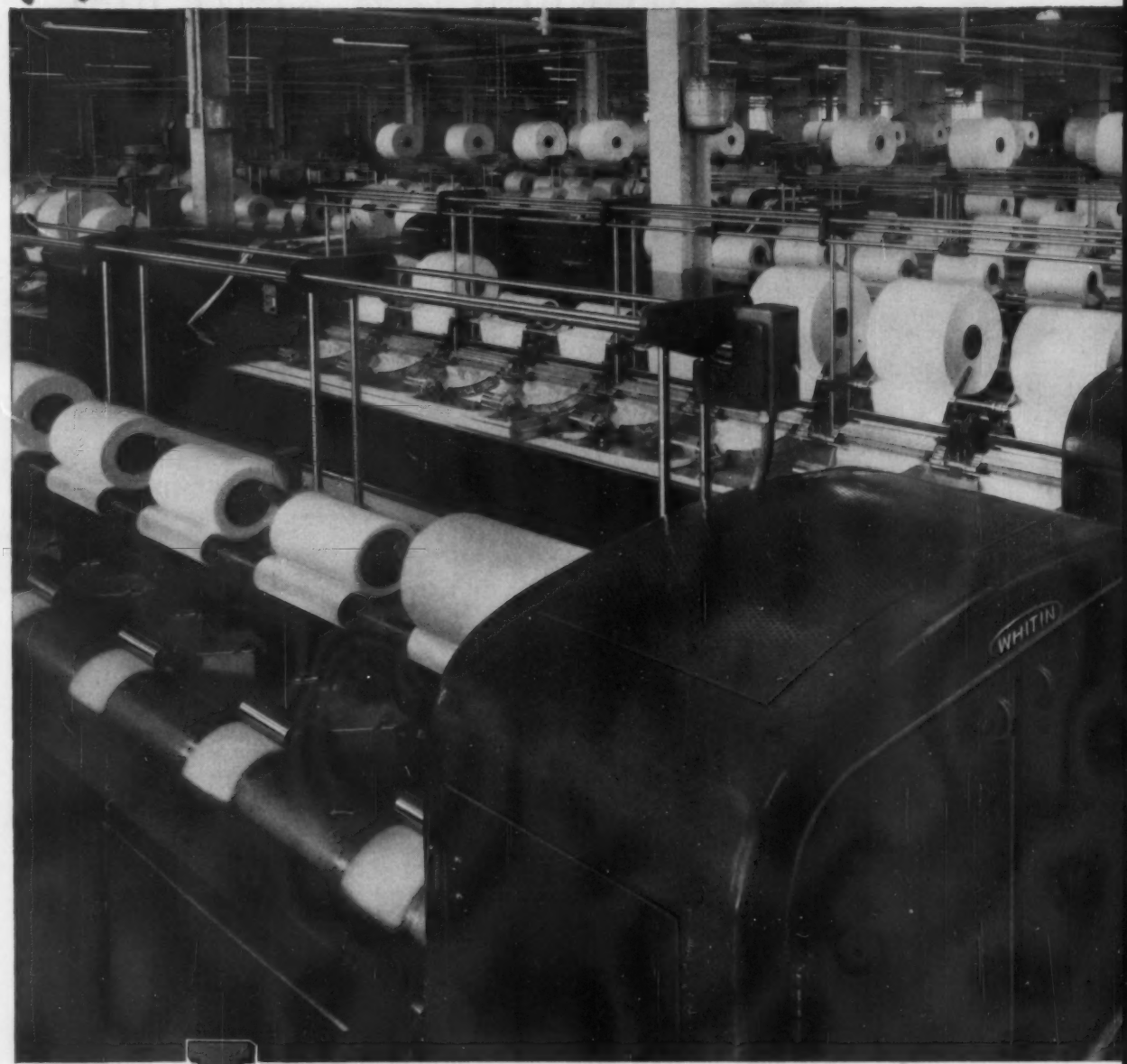
Now.. Whitin presents the



SUPER J

Higher production rates up to 50 lbs./hr. (at 100% efficiency) and greater nep removal are performance features of the new Whitin Super J Comber. Its constructional features have been thoroughly proven in mills all over the world. The comber operates at a constant 150 nips per minute, 20% faster than other combers, producing very even, high quality sliver, with extremely accurate waste removal.

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SUPER J COMBER

Featuring...

- **Higher Production**
- **Greater Nep Removal**
- **Unsurpassed Sliver Quality**
- **Lowest Maintenance and Operating Costs**

• CONSTRUCTION FEATURES •

- 8 heads, single side
- Extremely precise construction
- 50% fewer parts than competitive combers
- New spring cushion plate, heavier detaching rolls and weighting, signal lights, lap run-out and knock-off motions
- Unique, simple detaching motion
- Bi-Coil or single sliver
- Unit assemblies

• OPERATING FEATURES •

- Simple to operate
- Efficiency up to 97%
- Low production cost/lb.
- Maintains settings between annual overhauls
- Simple setting, timing and waste control adjustments
- All heads set identically
- Total repair and maintenance costs 1/10th or less than competitive combers

For complete information ask your Whitin representative or write direct to us.

Whitin MACHINE WORKS

WHITINSVILLE, MASSACHUSETTS

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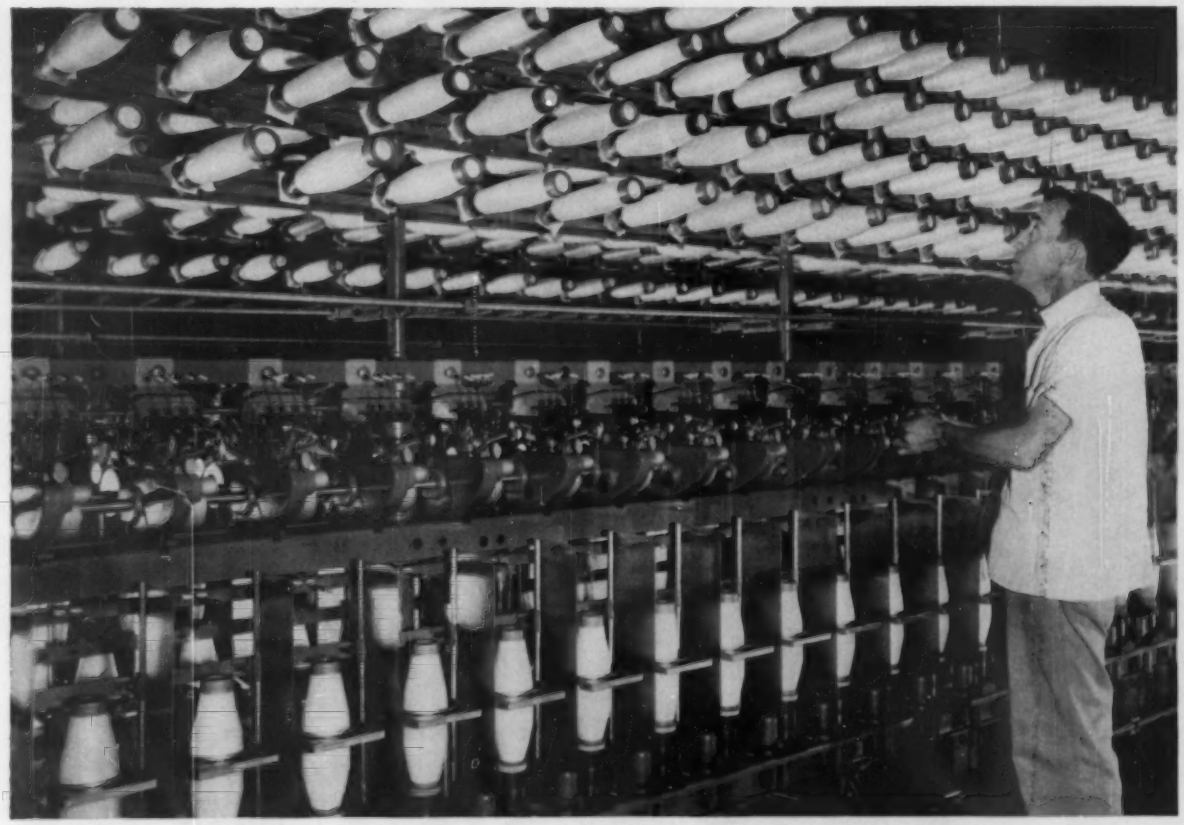

Leesona Model 10 Ring Twisters processing glass yarn at the Seguin, Texas, plant of the Coast Manufacturing and Supply Company. The firm produces Trevarno Glass Fabrics.

Producers of TREVARNO GLASS FABRICS chose Leesona Model 10 Ring Twisters

Years of research and planning went into the decision of Coast Manufacturing and Supply Company to enter the textile industry as processors and weavers of glass cloth. The 85-year-old Livermore, California, firm, with a long history in the manufacturing and distribution of safety fuse for the mining and construction industries, made the carefully-planned move into textiles in 1947.

Ralph E. Merritt, president of the firm, reports:

"After evaluating other types of twisting equipment, Coast Manufacturing and Supply Company decided upon the Leesona Model 10 Ring Twister."

Model 10's are used exclusively in Coast Manufacturing's 800-spindle twister installation in Seguin, Texas, producing a double-tapered package which can be used directly for filling and warping operations without rewinding.

Versatile Leesona Model 10's can also produce a tapered top or straight wind package. They are ideal for processing not only glass yarn, but rayon, spun rayon, nylon, silk, wool, worsted, cotton and combination yarns, and the new bulk and stretch yarns as well.

Make Your Own Evaluation

See how flexible Leesona Model 10 Ring Twisters can improve your own twisting operations. See your Universal representative or write direct.

23.6.11

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Winding and Twisting Machinery for Natural and Synthetic Yarns

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for longer valve life

in a variety of corrosive services

JENKINS NI-RESIST

GATE VALVES

Where you encounter acids, salt and alkaline solutions, sea water, brine or other corrosive fluids, vapors or gases, you'll want Jenkins Ni-Resist Type 2 Cast Iron Gate Valves with type 316 stainless steel trim. They have a remarkable ability to withstand destructive corrosion and erosion.

In paper mill service, food processing, petroleum refining, chemical plants and other process industries, Jenkins combination of Ni-Resist type 2 cast iron and type 316 stainless steel, plus Jenkins extra *value* construction throughout greatly extends valve life.

Designed especially for corrosive services, the Jenkins Ni-Resist line of gate valves also has superior metal-to-metal wearing qualities. Copper-free, they will not discolor or contaminate products being carried in the line. Let the famous Jenkins Diamond be your guide when choosing Ni-Resist valves . . . it means longer, trouble-free service.

GET COMPLETE INFORMATION
from your Jenkins Distributor, or write Jenkins Bros., 100 Park Avenue, New York 17.

JENKINS VALVES

LOOK FOR THE JENKINS DIAMOND

JENKINS SINCE 1864

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Sold Through Leading Industrial Distributors Everywhere

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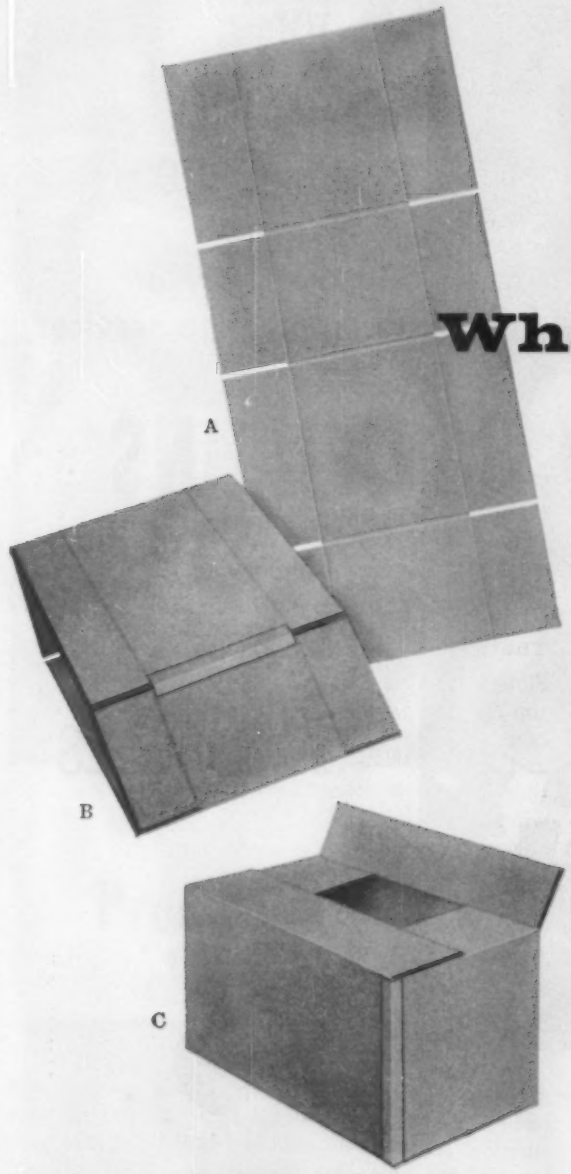
What you should know about

What should a box

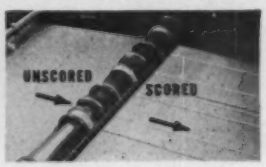


A. Scored and slotted sheet
B. Folded and taped
C. Assembled box

The "creases", or scores, on corrugated boxes facilitate folding. When straight, and properly formed, they make your packing job easier and faster, assure maximum strength and serviceability of the box.

But just being straight isn't enough. Too narrow or too shallow a score sets up internal stresses, makes the box hard to fold. Too deep, weakens the board, makes the fold easy to tear and come apart during shipment.

What makes a perfect score?



Scoring the sheet

It depends largely on the thickness and type of board, the scoring process, what you are shipping, and how it is shipped. First, the score must fold without cracking the board. It must also fold straight, regardless of the direction of the corrugations. It must not cramp the inner liners too much when folded at 180°. And it must, under test, withstand

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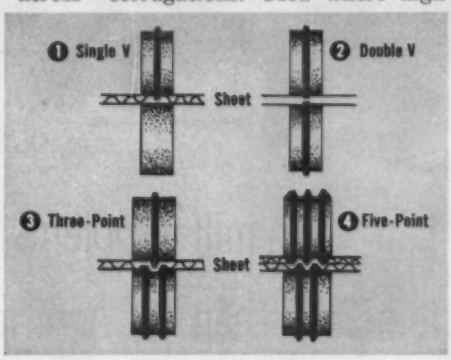
scoring and slotting of Union Boxes

"crease" be...besides straight?

combined tearing, bending and tension forces simulating those it will meet in actual service.

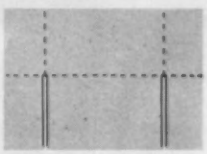
The different kinds of scores

There are four basic methods of scoring corrugated board. 1. The "Single V" crease—most commonly used when the direction of the score is parallel to the corrugations. 2. The "Double V"—generally used *across* the corrugations and where a clean, good-looking fold is essential. 3. The "Three-Point" crease — good both "with" and "across" corrugations. Used where high tearing strength is paramount. And 4., the "Five-Point" crease. This, too, scores both ways. It is used almost exclusively for double wall board.



The importance of slotting

Slots, cut by razor-sharp knives, form the top and bottom flaps of your corrugated box. Each slot must cut to an exact width, and at right angles to the flap scores so that the folded flaps will be perfectly parallel where they come together. The knives must cut a clean slot, without ragged edges or "lint". Improper slotting can seriously impair the appearance and protective qualities of your finished box.


Slots form the flaps

At Union, slotting and scoring of corrugated containers is an exact science. It's one small part of Union's complete structural design service to assure you maximum product protection. It's one of the reasons why Union-engineered boxes are used consistently by shippers in every industry.

union camp

Write for Union's free, informative booklet "Manufacturing Sheets for Corrugated Boxes."

UNION BOXES

UNION BAG-CAMP PAPER Corporation
233 BROADWAY, NEW YORK 7, N. Y.

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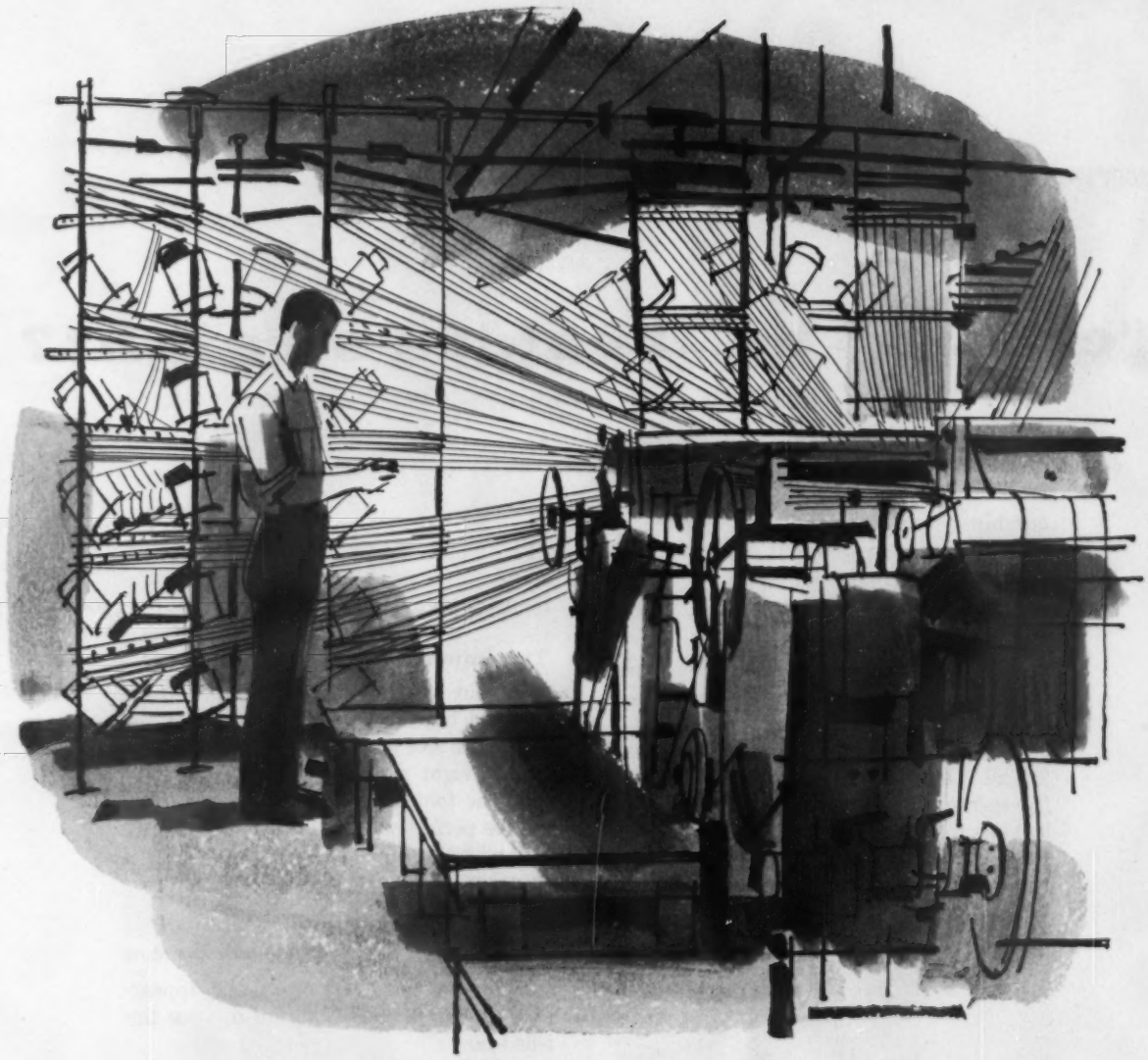


Nowhere in the textile industry can your mill problems be solved more realistically and effectively than in American Viscose Corporation's TRD*. This is a priceless plus you get with Avisco® fibers or yarns, and you pay no more for it.

*Here in our Textile Research Department we use actual mill machinery under mill operating conditions. With such complete facilities, we can start with the fiber, open it, card it, spin it, weave it, dye and finish it. Or starting with the yarn, we can beam it or twist it, weave it or knit it, dye it and finish it. What works here will work in your mill, too.

AVISCO

This assistance is as near as your phone. Call LA 4-7200 or write American Viscose Corp., 350 Fifth Ave., New York 1, N. Y.

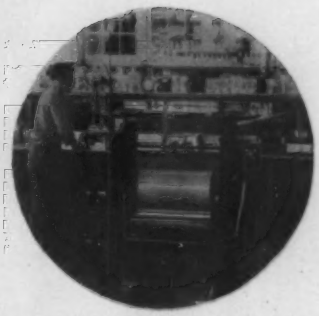
← For more data, write this page number on Reader-Service card.

PIGMENT DYEING

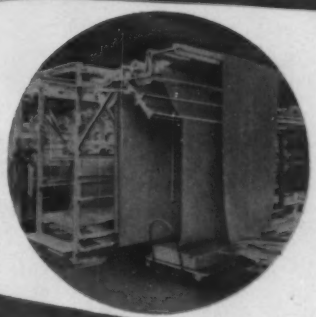
can simplify operations 3 ways

Looking for ways to meet shifts in demand or market conditions easier . . . faster? Wider use of pad dyeing with SHERDYE® Pigment Colors can simplify production changes in at least three important ways:

NEW SHADES can be prepared more quickly . . . translated directly from laboratory results to production-line results.



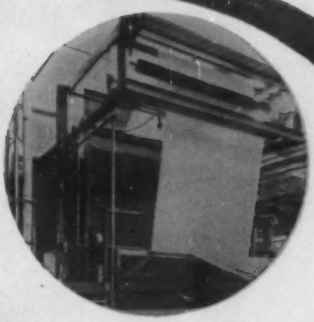
• EASIER SHADING—matches in laboratory mean matches in production



• MAKES SHORT RUNS or long runs equally practical

SHORT RUNS as low as 1000-5000 yards, as well as long runs, can be continuous-process dyed with pigment colors, efficiently and economically.

LESS PROCESSING, in most cases, is required with pigment dyeing, since dyeing and finishing can be accomplished with the same bath.



• ELIMINATES separate finishing operations

Full details on these and other advantages of SHERDYE Padding Colors may suggest more ways to simplify operations . . . cut costs . . . improve results. Contact The Sherwin-Williams Co., Pigment Color and Chemical Division, 260 Madison Ave., New York 16, N. Y.

SHERWIN-WILLIAMS

SHERDYE

PADDING COLORS

PIGMENT COLOR & CHEMICAL DIVISION

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in carpeting, nothing adds wear like NYLON!

How does it wear? That's one of the most important questions consumers ask about carpeting. Permanent textures, higher recovery from crush, excellent resistance to matting, and greater resiliency are other important performance characteristics consumers want to know about. Nylon has them *all*, and they've been proved not only in the laboratory, but in *actual wear tests, too!* Flame-resistance? Nylon does not support flame. *No other fiber adds durability to floor covering like nylon!* The toughest possible traffic test proves... The Higher The Nylon Content—THE LONGER THE WEAR!

THE NEW Nylon Staple I·R·C

INDUSTRIAL RAYON CORPORATION, Sales Office: 500 Fifth Avenue, New York 36, New York · 627 Guilford Building, Greensboro, North Carolina

Identical strips of carpeting—without padding of any type—were laid on bare, rough steps in an industrial plant and subjected to heavy plant-personnel traffic. Each carpet contained a different percentage of nylon as indicated in the unretouched photograph shown. The carpets were rotated progressively and regularly. Top 3 samples were removed after stair-edge showed 80 to 95% pile destruction. Test for remaining 4 was stopped at the 98,000 pedestrian mark.

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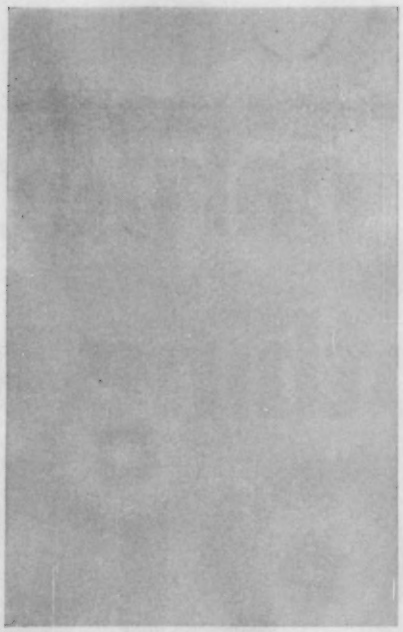


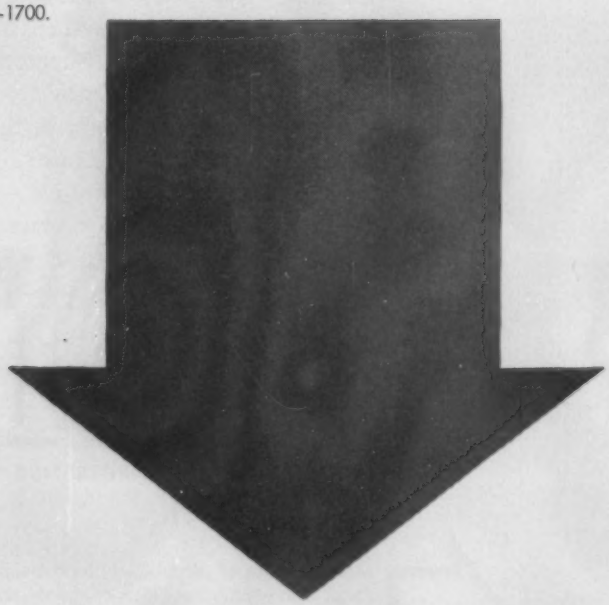
New Leveling Agent For Direct And Vat Colors

Economical . . . because it's so effective—even in very small quantities!

Lyogen® DK is recommended for use in: dyebecks—to level out different rates of strike; pressure machines—to assure solid shades and penetration; jigs—to avoid side-to-center shadiness; pads—to avoid shade variations. Shade, fastness and dischargeability remain unaffected and Sandoz Lyogen DK does not interfere with subsequent processing.

Write us today for Lyogen DK booklet with color illustrations of leveling tests. SANDOZ, INC., 61-63 Van Dam Street, New York 13, N. Y. ALgonquin 5-1700.

SANDOZ LYOGEN DK



SANDOZ

SANDOZ THINKS AHEAD WITH TEXTILES

...here's "manpower" that hands you a bonus!

Think how many of your plant's handling jobs can be accomplished with much less effort—swiftly and profitably—by one operator "teamed up" with a powerful Towmotor fork lift truck!

You get an entirely new concept of modern mass-handling. You get a "bonus" in extra profits because you multiply manpower with the payroll you have. And you get a bonus in plant-wide morale when work flows on-schedule through every department . . . effortlessly . . . with a bigger day's work done.

Called the "ideal" fork lift truck by management and operators alike, the latest Towmotor models offer exclusive features as advanced as these, at no extra cost:

- New-concept functional engineering
- Simplified dual-entry compartment
- Full-traction weight distribution
- Adjustable off-center visibility
- New *motion-studied* centralized control
- Towmotor improved precision steering

Power steering, 'TowmoTorque' Drive at extra cost

These and 60 other points of superiority are described in Towmotor booklet SP-23 for comparison. Get a copy from Towmotor Corporation, Cleveland 10, Ohio.

Leaders for 38 years in building Fork Lift Trucks and Tractors

TOWMOTOR® THE ONE-MAN-GANG — GERLINGER

Gerlinger Carrier Co., Dallas, Oregon, is a subsidiary of Towmotor Corporation, Cleveland, Ohio

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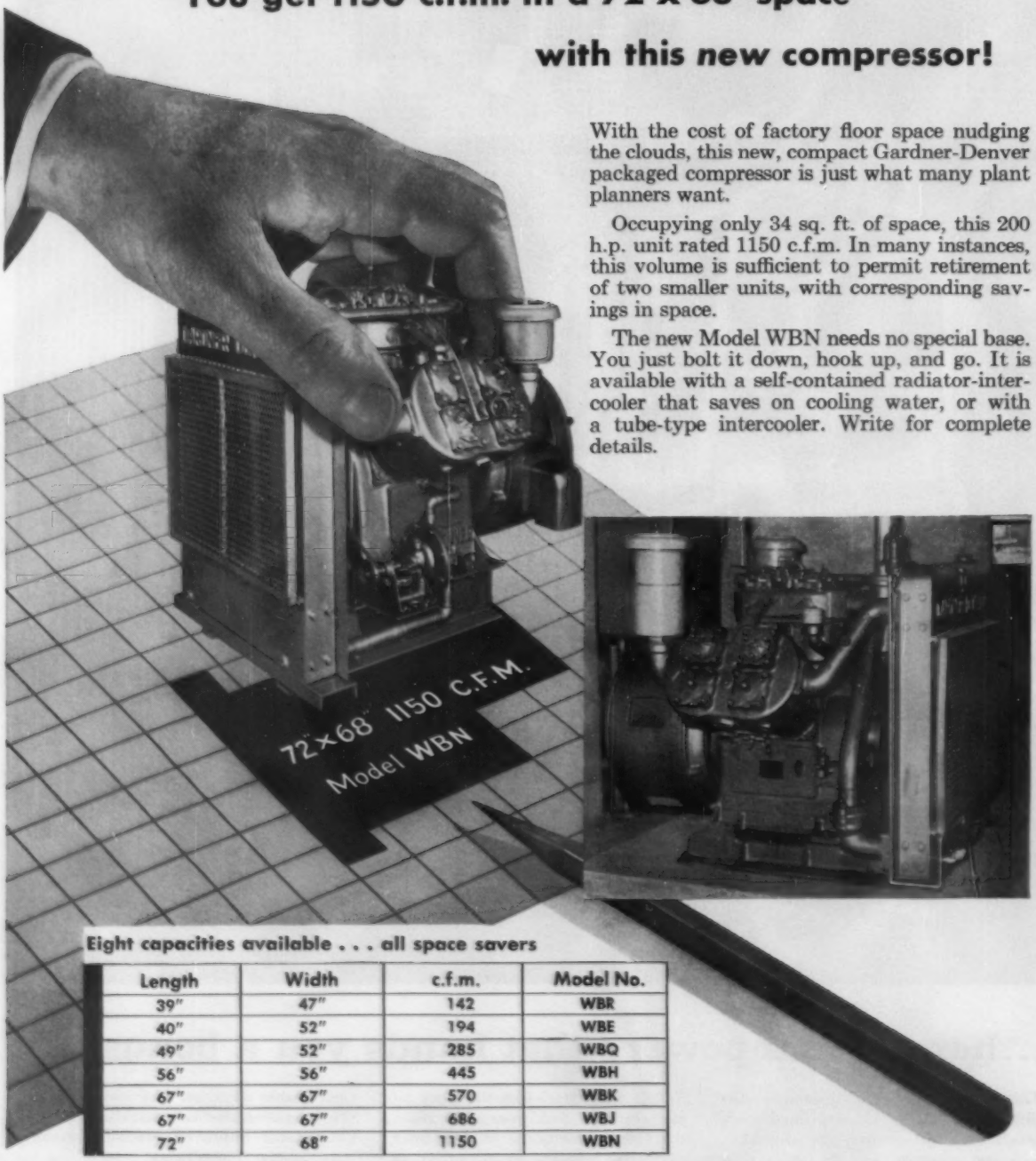
Your own plotting will prove it!

You get 1150 c.f.m. in a 72"x 68" space

with this *new* compressor!



With the cost of factory floor space nudging the clouds, this new, compact Gardner-Denver packaged compressor is just what many plant planners want.

Occupying only 34 sq. ft. of space, this 200 h.p. unit rated 1150 c.f.m. In many instances, this volume is sufficient to permit retirement of two smaller units, with corresponding savings in space.

The new Model WBN needs no special base. You just bolt it down, hook up, and go. It is available with a self-contained radiator-intercooler that saves on cooling water, or with a tube-type intercooler. Write for complete details.

Eight capacities available . . . all space savers

Length	Width	c.f.m.	Model No.
39"	47"	142	WBR
40"	52"	194	WBE
49"	52"	285	WBQ
56"	56"	445	WBH
67"	67"	570	WBK
67"	67"	686	WBJ
72"	68"	1150	WBN

ENGINEERING FORESIGHT — PROVED ON THE JOB
IN GENERAL INDUSTRY, CONSTRUCTION, PETROLEUM AND MINING

GARDNER-DENVER

Gardner-Denver Company, Quincy, Illinois

BRANCH OFFICES: *Atlanta*, Ga.; Birmingham, Ala.; Knoxville, Tenn.; *Washington*, D. C.; New York, N. Y.; Philadelphia, Pa.; *Pittsburgh*, Pa.; New Orleans, La.; Louisville, Ky.

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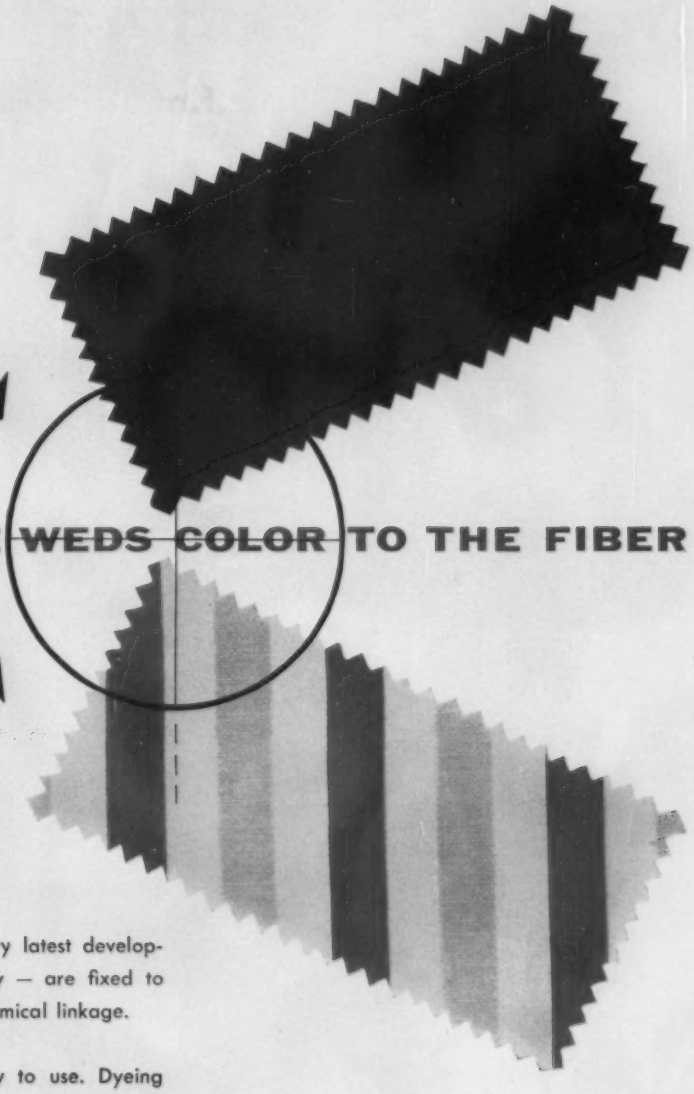
setting
new sights
in color
achievement



CHEMICAL LINKAGE WEDS COLOR TO THE FIBER

PROCION DYES

PROCIONS – the very latest development in dyestuffs technology – are fixed to cellulosic fibers by direct chemical linkage.

PROCIONS are easy to use. Dyeing proceeds with or without the use of steam. Development involves a simple treatment with alkali. Procions may be applied by a variety of methods, and are particularly suitable for high speed continuous applications.

PROCIONS possess outstanding brilliancy, high tinctorial power, good fastness to light and to wet treatments.

DYE OR PRINT **PROCIONS**

AHCO DYES

ARNOLD, HOFFMAN

ARNOLD, HOFFMAN & CO., INC. • EST. 1815
OFFICES & TECHNICAL SERVICE LABORATORIES
PROVIDENCE, ATLANTA, CHARLOTTE, TETERBORO
ASSOCIATED WITH IMPERIAL CHEMICAL
INDUSTRIES, LIMITED • LONDON, ENGLAND

PROCIONS . . . AN ENTIRELY NEW TYPE OF DYESTUFF

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when Acrilan® quality is being checked . . .

WE ALWAYS CALL THE CLOSE ONES YOUR WAY!

Two teams have direct responsibility for making Acrilan. Plus an umpire.

One team, the Technical Department, writes the specifications for the product. (And they demand the closest tolerances, the most exacting standards in the industry.)

The other team, Manufacturing, provides the facilities for producing Acrilan acrylic fiber according to these specifications.

The umpire is Quality Control.

Like the man in blue on the ball field, Quality Control calls the plays. *Unlike* the man in blue, *this* umpire is frankly biased. In your favor.

He calls all the close ones your way. Let there be a hairline deviation from the prescribed standards at any stage of production . . . and Quality Control gives the batch in question the well-known thumb. In other words, like all umpires, Quality Control has the last word.

As a result, Acrilan quality has now reached a level of top-grade uniformity once thought unattainable in the newer man-made fibers.

In *your* mill . . . thanks largely to this vigilant umpiring by Quality Control . . . Acrilan offers the following significant contributions to efficient, economical operation:

- STAPLE-LENGTH UNIFORMITY *superior to the most critical needs in the textile field.*
- FLY REDUCTION *so significant it is raising yarn quality, reducing mill costs and waste.*
- UNIFORM DYEABILITY . . . *dye merges maintained without change for over two years now.*
- FAR BETTER FINISH CONTROL . . . *with the direct effect of improved carding and spinning uniformity.*
- IMPROVED HIGH BULK PROCESSING . . . *for greater assurance of fabric shrinkage control.*

In the light of such advances, there can be no arguing with the umpire. His calls in your behalf have gained for Acrilan over the past two years the record of being the top-spinning, smoothest-running fiber in mill after mill throughout the country.

ACRILAN®

THE CHEMSTRAND CORPORATION • GENERAL SALES OFFICES: 350 FIFTH AVE., NEW YORK 1, N. Y. • DISTRICT SALES OFFICES: 3½ Overwood Road, Akron, Ohio; 4 Pearl Street, Dedham, Mass.; 222 South Church Street, Charlotte, N. C. • PLANTS: ACRILAN® ACRYLIC FIBER—Decatur, Ala.; CHEMSTRAND® NYLON—Pensacola, Fla.

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Ask to see METLON'S new, improved, disposable spool!

AMERICAN INSTITUTE OF LAUNDERING · CERTIFIED WASHABLE

METLON® with MYLAR*

the only metallic yarn guaranteed washable by the American Institute of Laundering!

• ACCEPTS

vat-dyeing
piece-dyeing
yarn-dyeing

• RESISTS

carbonizing
vulcanizing
mercerizing

*DuPont's Reg.—Trademark for its Polyester Film

METLON SPINS A BETTER YARN!

METLON CORPORATION · 432 Fourth Avenue, New York 16, N.Y.

Subsidiary of Acme Backing Corporation

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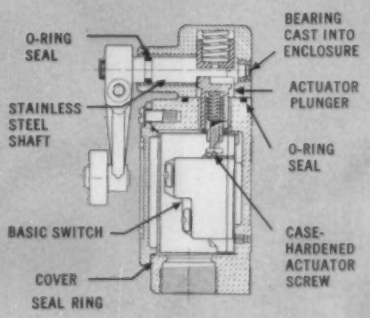
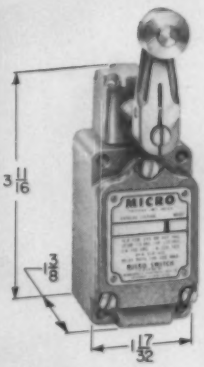
MICRO SWITCH . . . FIRST IN PRECISION SWITCHING

Seals Give Maximum Protection

Sealing is provided by use of O-ring seals on the actuator shaft and between the actuator head and the housing. A synthetic rubber ring seal is provided for the cover. These seals provide maximum protection against the entrance of dust, lint, oil and other liquids.



Moving Parts Completely Sealed

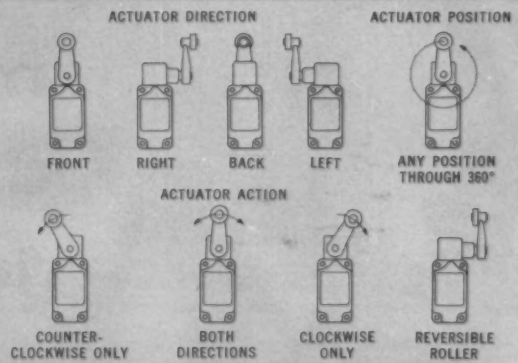


All moving parts and the switching chamber are completely sealed—protected from wear or becoming fouled. Two-circuit double break contact arrangement allows flexibility in circuit design. Roller arm actuators are of forged aluminum alloy—give utmost resistance to shock and vibration.

These MICRO SWITCH "LS" precision limit switches can be your answer to MORE PRODUCTIVE mill operations

Easy to mount . . . easy to install . . . reliable in operation . . . these small, versatile, two-circuit switches meet today's demand for more automatic processes

Send for Catalog 83 for full information



Field adjustable to any position

The roller arm actuator is field adjustable through 360°, positively locking at any position. Actuators are assembled to operate in either direction or in one direction only, clockwise or counter-clockwise by removing the actuator head and rotating the notched plunger 90°. The head may be rotated to permit actuation from any of four quadrants.

SWITCH CHARACTERISTICS:

Operating force—3 lbs. max.; Pretravel—20° max.; Full overtravel force—6 lbs. max.; Differential travel—12° max.; Release force—½ lb. min.; Overtravel—30° min.

ELECTRICAL RATING: 10 amps. 120, 240, 480 v ac; ½ H.P. 120 v ac; 1 H.P. 240 v ac; .8 amp. 115 v dc; .4 amp. 230 v dc; .1 amp. 550 v dc. Pilot duty rating 600 v ac, max.

Write for the name of the MICRO SWITCH distributor nearest you. Field engineering service is available at your nearby MICRO SWITCH Branch office.

MICRO SWITCH

A DIVISION OF MINNEAPOLIS-HONEYWELL REGULATOR COMPANY

In Canada, Leaside, Toronto 17, Ontario • FREEPORT, ILLINOIS

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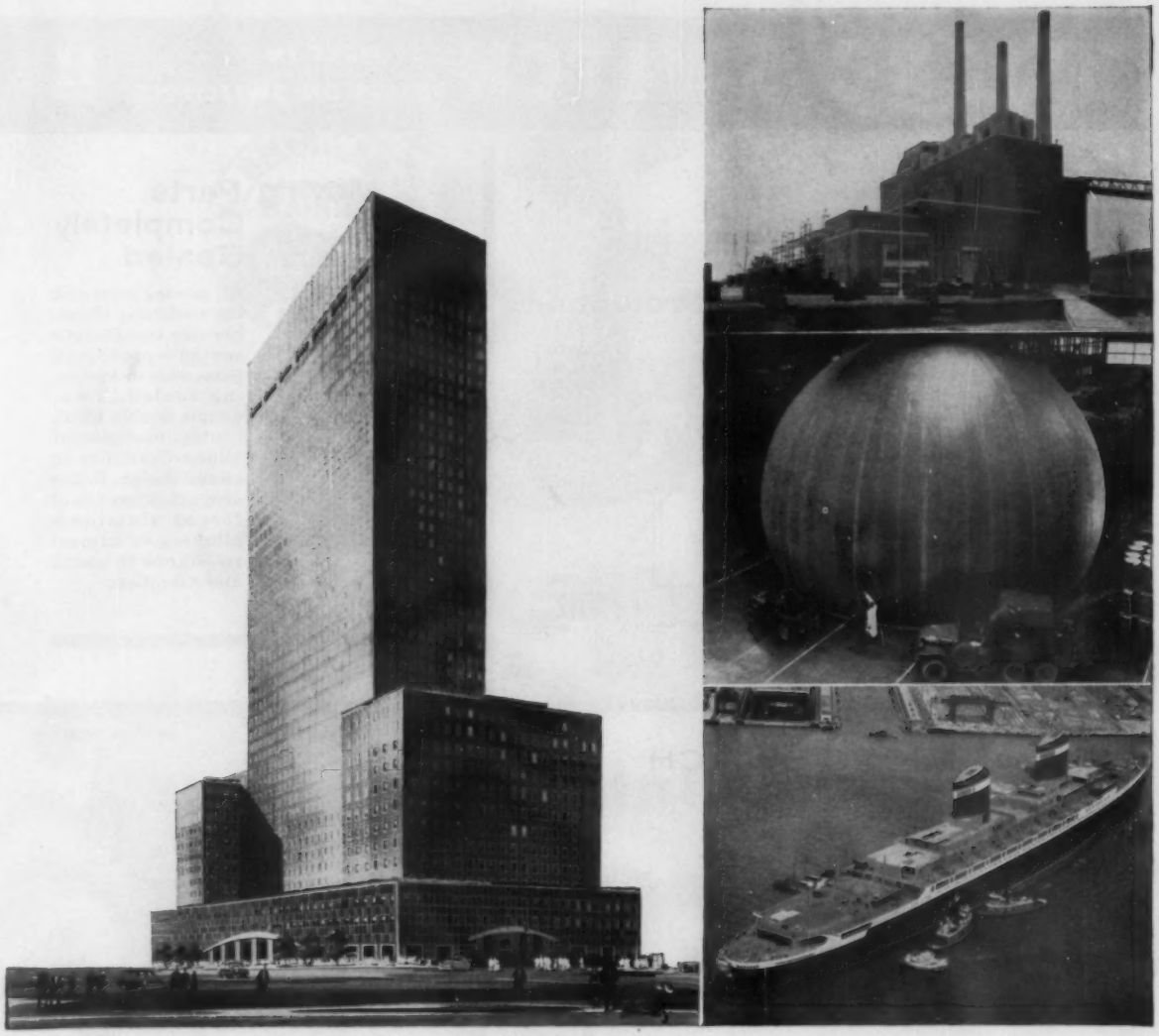

Above: *"Buffalo" Fans supply air for Socony-Mobil Building.* Above right: *Hundreds of power plants depend on "Buffalo" Draft Fans.* Center: *Radomes inflated by "Buffalo" E Blowers.* Lower right: *S.S. United States ventilated by "Buffalo" Fans.*

FAN·tas′tic *adj.* *Imaginary, unreal* ...Webster

The variety of jobs done by fans today might seem fantastic. Small "Buffalo" Type "E" Blowers inflating radomes to shelter radar in the Arctic. "Buffalo" Fans supplying all the air to ventilate the world's fastest ocean liner and the world's largest air conditioned office building. "Buffalo" Fans delivering tons of air at high temperatures and pressures for generating power. These are just four examples.

Every air job is different – yet all volume, pressure, temperature and installation requirements are met exactly by built-to-order "Buffalo" Fans.

80 years' experience, plus full engineering, testing and manufacturing facilities are your assurance of *every* air job well done when you call on "Buffalo" and its *complete* line of fans.

BUFFALO FORGE COMPANY

BUFFALO, NEW YORK

Canadian Blower & Forge Co., Ltd., Kitchener, Ont.

VENTILATING AIR CLEANING AIR TEMPERING INDUCED DRAFT EXHAUSTING FORCED DRAFT COOLING HEATING PRESSURE BLOWING

He puts performance-plus-economy in your next season's shades!

Matching unusual shades is a job for specialists who can formulate for the required working and fastness properties *at minimum cost!* Smart buyers do business with dyestuff makers who provide this specialized assistance.

National Aniline is amply staffed to render exceptionally fine technical service. Our representatives spend much of their time in the mills. And they are well supported by the fast, accurate work of strategically located Application Service Laboratories.

Backing up this on-the-job service are the industry's most complete shade cards, Standardization Control Laboratories to assure unerring product uniformity, and constant basic research on still better dyes and application methods.

This comprehensive service is included in the price you pay for dyestuffs. You are sure of getting it when you call National Aniline.

NATIONAL ANILINE DIVISION ALLIED CHEMICAL & DYE CORPORATION • 40 RECTOR ST. NEW YORK 6, N. Y.

Akron Atlanta Boston Charlotte Chattanooga Chicago Columbus, Ga. Greensboro Los Angeles New Orleans Philadelphia Portland, Ore. Providence Richmond San Francisco Toronto

National Aniline — Allied Chemical

L. F. Dommerich & Co., Inc.

Executive and General Offices

271 MADISON AVENUE

NEW YORK 16, N. Y.

Telephone: Murray Hill 3-8650

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L. F. Dommerich & Co. California Corp.

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Inquiries as to our services solicited

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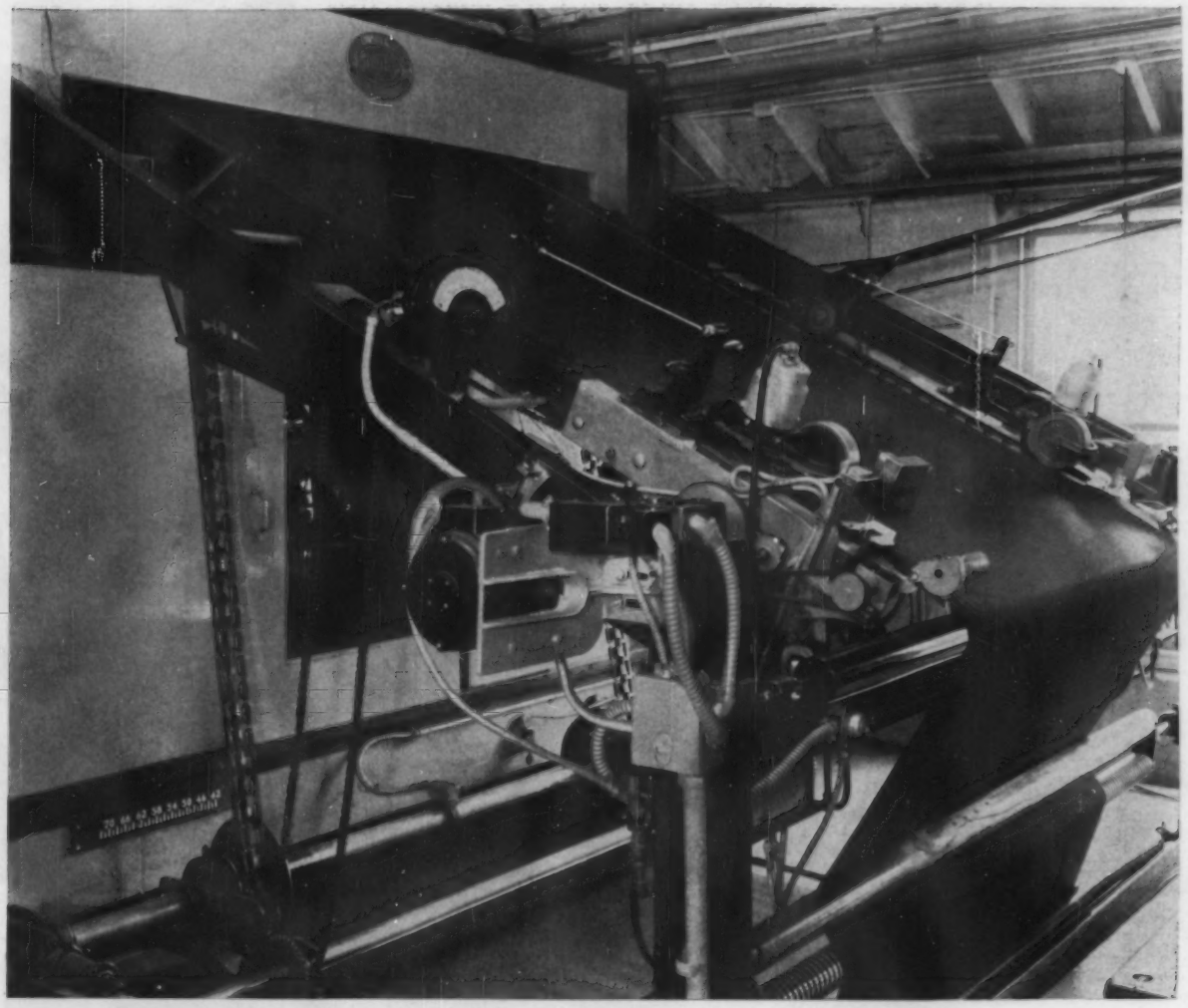
BUSINESS ESTABLISHED 1840

CUTTING COSTS with RUBBER COVERED ROLLS



STOWE-WOODWARD Rubber Squeeze Rolls cut drying time and drying costs too . . .

Maximum uniform extraction of moisture in the squeeze rolls greatly reduces the load on the dryers, resulting in dual savings. Where the drying operation is a limiting factor in the speed of the process, the increase in extraction at the squeeze rolls can mean an increase in the speed of the process and a corresponding increase in production.

In new installations, the increased extraction afforded by Stowe-Woodward rolls often permits the use of smaller dryers, steam generating equipment and tenter frames. Ask your Stowe-Woodward Sales Engineer about the advantages of Stowe-Woodward rolls in your plant.

Complete roll processing plants at:
NEWTON UPPER FALLS, MASS.
NEENAH, WISCONSIN
GRIFFIN, GEORGIA

STOWE-WOODWARD, Inc.
Craftsmen in rubber
RUBBER ROLLS with a REPUTATION

New York office: WOOLWORTH BUILDING, NEW YORK 7, N. Y. ● *On the West Coast:* HUNTINGTON RUBBER MILLS, INC., SEATTLE

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Hartford reduces spindle cost with split-base design in Kaiser Aluminum

HARTFORD
BALL BEARING
SPINNING SPINDLE

Manufactured by Hartford Machine Screw Company, Division of Standard Screw Company, Hartford, Connecticut

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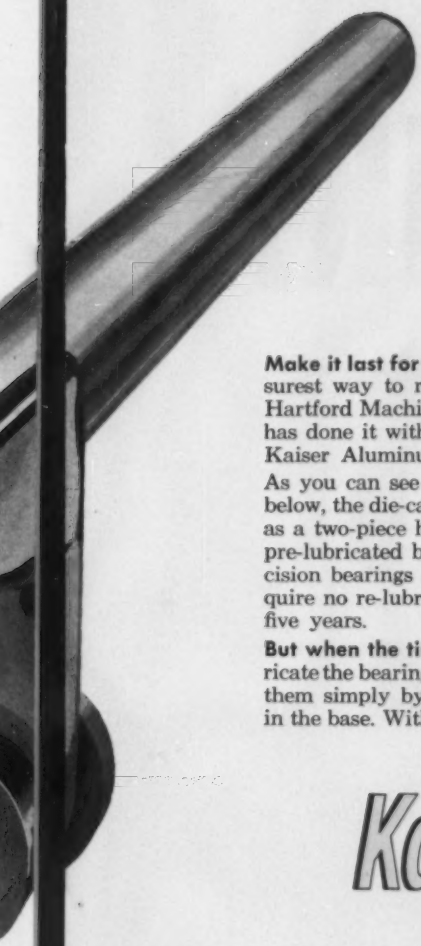


Make it last for thirty years . . . that's the surest way to reduce spindle cost, and Hartford Machine Screw Company, Inc. has done it with its split-base design in Kaiser Aluminum.

As you can see in the "exploded" view below, the die-cast aluminum base serves as a two-piece housing for the spindle's pre-lubricated ball bearings. These precision bearings eliminate oiling and require no re-lubrication for an estimated five years.

But when the time does come to re-lubricate the bearings, you can quickly reach them simply by removing three screws in the base. With this simple design provision for periodic maintenance, the bearings can last up to thirty years!

This split-base design provides the usual means for attaching a spindle to the rail, while its lightweight aluminum construction makes handling easier and gives permanent protection against rusting. The lightweight aluminum bobbin blade, made from aluminum screw machine stock for minimum machining cost, reduces stopping and starting inertia, cuts vibration.

In short, the Hartford spindle design in Kaiser Aluminum gives you the simplest of maintenance . . . *and* the least need for it!

Kaiser Aluminum

the bright star of metals

MORE KAISER ALUMINUM FOR THE TEXTILE INDUSTRY

Shown below are some of the specialized textile equipment designs made more efficient and more economical with Kaiser Aluminum mill products.

Spindle rails, as an example, may be extruded in aluminum to the *exact shape wanted* . . . accurate within thousandths of an inch. Result? — maximum working efficiency, minimum first cost.

Aluminum can be fabricated by all known techniques, and offers you a unique combination of useful physical and chemical properties for important textile machinery applications:

Light weight and strength that reduce inertia and cut power needs for high-speed revolving components.

Resistance to shock that gives greater efficiency and longer life to impact-receiving components.

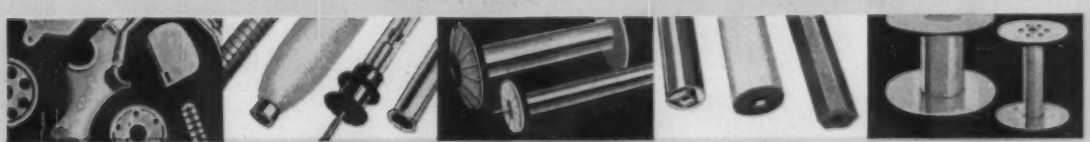
Thermal conductivity that eliminates "hot spots," distributes heat evenly in drying operations.

Heat and light reflectivity that improves drying process and lighting equipment service.

Electrical conductivity that improves economy for virtually all electrical purposes.

This remarkable versatility is now bringing aluminum to an ever-wider range of high-performance applications in the textile industry. And whether for new components or for new machines, Kaiser Aluminum engineers are ready now to work with you to improve the function, durability and economy of your equipment.

For further information and immediate assistance, call the Kaiser Aluminum sales office listed in your telephone directory. Or write Kaiser Aluminum & Chemical Sales, Inc., *Executive Office,* Kaiser Bldg., Oakland 12, California; *General Sales Office,* Palmolive Bldg., Chicago 11, Illinois.



Die Castings
Pig & Ingot

Bobbins and
Adapters on Spinning
Spindles
Rod & Bar

Warp Beams
Castings & Extruded
Tube

Cloth Rolls &
Stock Shells
Extrusions

Spools & Bobbins
Sheet, Tubing,
Extrusions

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THE INVISIBLE PLUS IN NYLON BY

ENKA

FOR LONG WEAR
excellent abrasion resistance

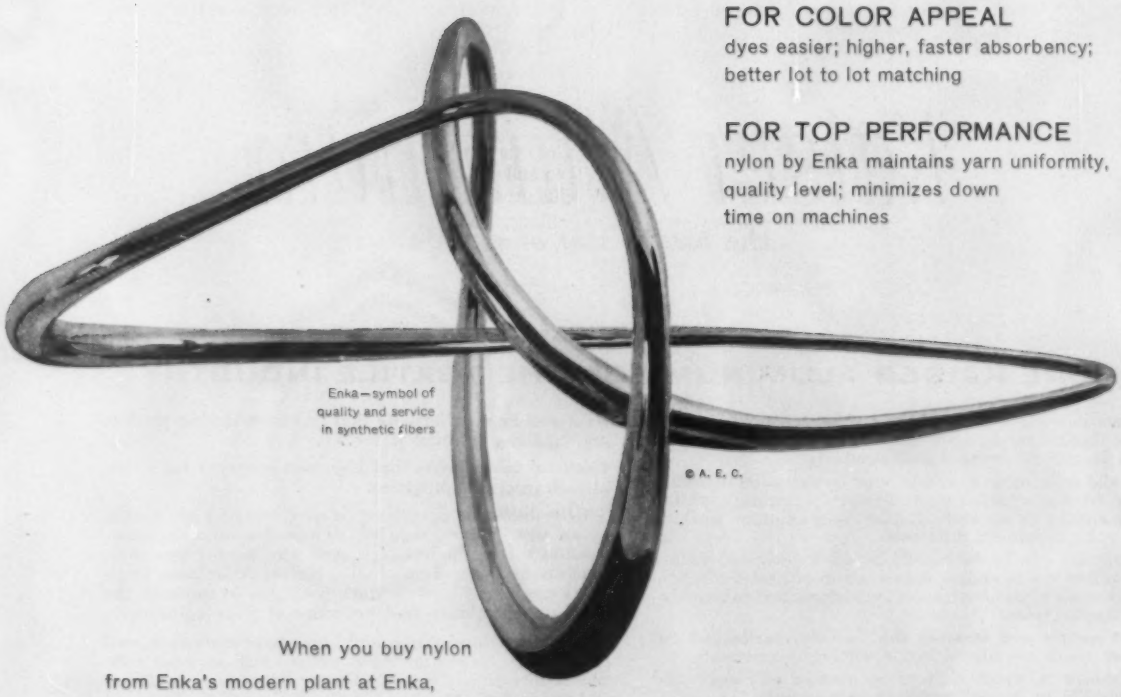
FOR EASY CARE
washable, dry cleanable, spot cleanable

FOR QUICK DRYING
the sales appeal of convenience

FOR ECONOMY
long wear cuts down expense

FOR COLOR APPEAL
dyes easier; higher, faster absorbency; better lot to lot matching

FOR TOP PERFORMANCE
nylon by Enka maintains yarn uniformity, quality level; minimizes down time on machines



Enka—symbol of quality and service in synthetic fibers

© A. E. C.

When you buy nylon from Enka's modern plant at Enka, North Carolina, you get all of the fine qualities of nylon itself and *more*. This plus is the most important point of all—Enka's lively interest and active help in making *your* operation an outstanding success!

AMERICAN ENKA CORPORATION PRODUCERS OF JETSPUN® • FILAMENT AND STAPLE RAYON • FILAMENT AND STAPLE NYLON

530 Fifth Ave., New York 36, N. Y. • 871 McCallie Ave., Chattanooga, Tenn. • 428 Jefferson Standard Bldg., Greensboro, N. C. • 2001 Industrial Bank Bldg., Providence, R. I.

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Hemphill Chooses Franklin Process Colored Yarns

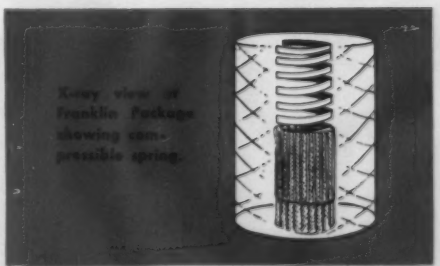
Hemphill Company (Pawtucket, R. I.), manufacturers of famous Banner hosiery knitting machines, believe that the best way to sell their products is to show samples of the hosiery which their machines produce.

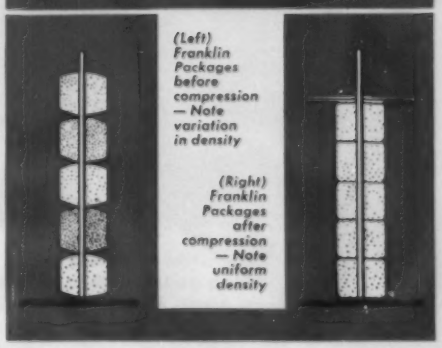
Since they take great pride in the quality of their machines, they naturally want the products of their machines to *express* quality—quality in yarns and quality in colors.

Therefore they use Franklin Process Colored Yarns in their samples and here's what they get:

1. **SMOOTH RUNNING YARNS** — specially made for knitting and properly conditioned and wound to deliver without excessive breakage or nipping.
2. **EVEN, BRILLIANT COLORS.** The Franklin Process of dyeing packages wound on compressible spiral springs assures uniform and complete penetration of the dye liquor to all parts of the package (see diagram).

Quality yarns and quality colors are only two of many advantages of using Franklin Process Yarn and Yarn Dyeing Service. This service is "conveniently yours" from one or all of 5 strategically located dye plants. Our Color Newsletter, issued four times a year, is also yours for the asking. It gives authoritative information about coming fashions in color. Write for your copy to-day, if you are not already on our mailing list.




(Left) Franklin Packages before compression — Note variation in density
(Right) Franklin Packages after compression — Note uniform density

Franklin Process

YARN MERCHANTS AND LARGEST PACKAGE DYERS IN THE WORLD — DYEING EXCLUSIVELY ON THE FRANKLIN SPRING

PROVIDENCE • PHILADELPHIA • GREENVILLE • CHATTANOOGA
FINGERVILLE, S. C.

New York Representative — 280 Madison Avenue

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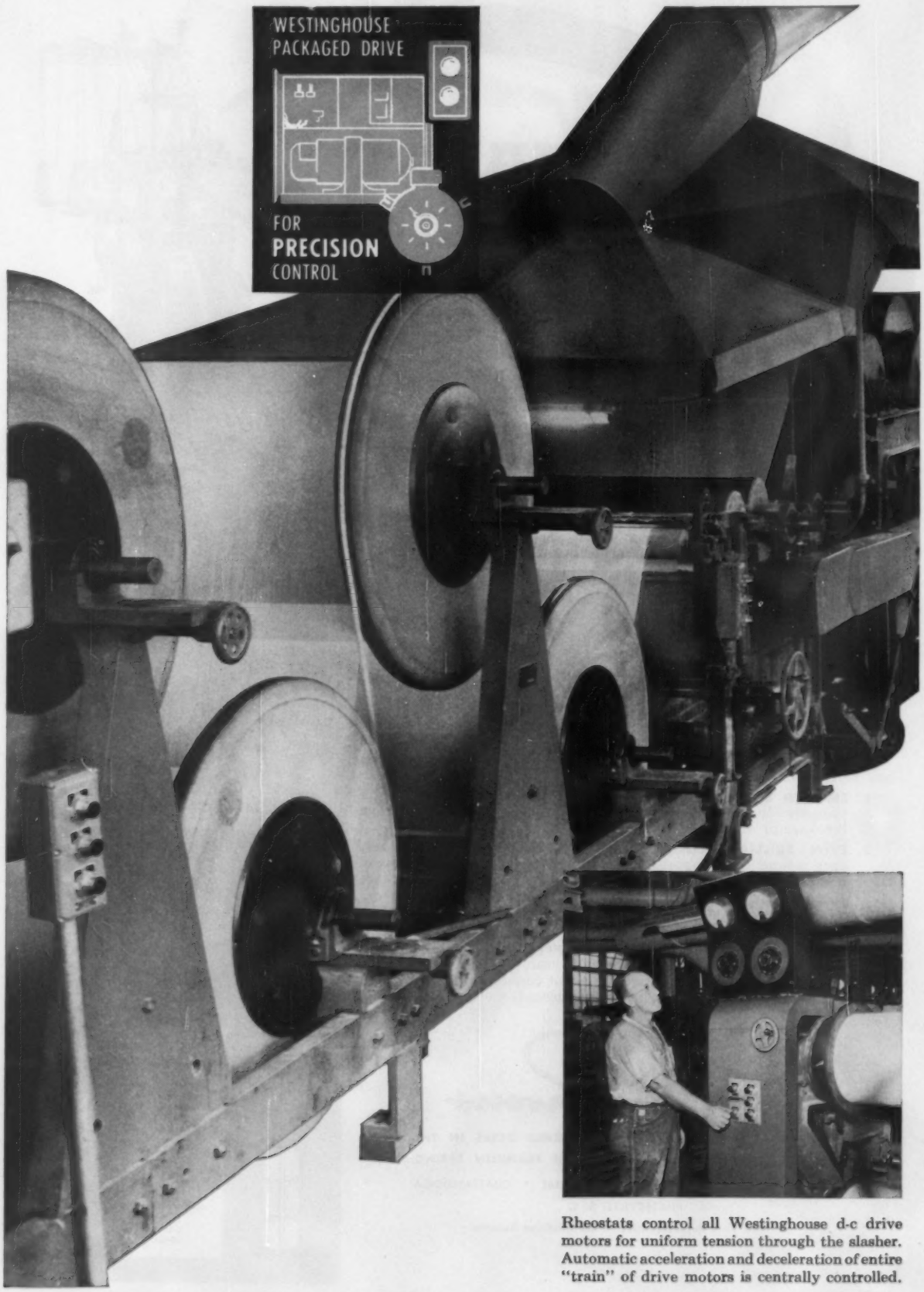

Rheostats control all Westinghouse d-c drive motors for uniform tension through the slasher. Automatic acceleration and deceleration of entire "train" of drive motors is centrally controlled.

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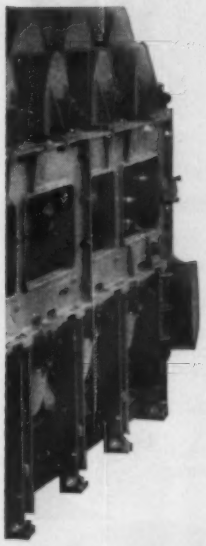
"Westinghouse AV-DRIVE doubles slasher production at a plant of The Kendall Company,"



says Engineer at Newberry, S. C. Kendall plant

Speed of the Kendall slashers, handling cotton warp yarn can be varied from over 100 yards per minute with less than 1,000 ends to a somewhat slower speed for over 2,500 ends. Rugged and dependable Westinghouse AV Drive permits production of about 1,750,000 yards of cloth each week at the Mollohon plant.

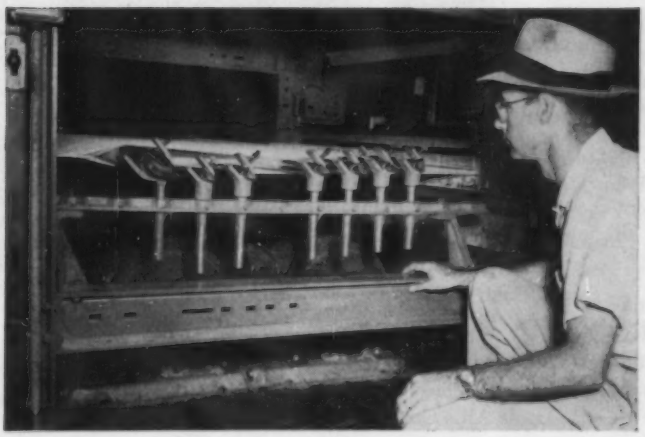
Two Westinghouse AV Drive-equipped slashers have replaced *four* weighted friction clutch-type units that required manual adjustments. "The AV Drives have saved us a lot of money, made our sizing operation completely automatic and doubled our production," states The Kendall Company engineer.

To learn how the versatile Westinghouse AV Drive can make your production more profitable, call your local Westinghouse representative or write Westinghouse Electric Corporation, 3 Gateway Center, P. O. Box 868, Pittsburgh 30, Pennsylvania.

J-22012

YOU CAN BE SURE...IF IT'S

Westinghouse



Inspector checks Mollohon plant slasher as machine sizes cotton warp yarn. Precision control prevents breakage of delicate yarns and time-consuming rethreading.

AV Drive, providing on-the-spot conversion of plant distribution system a-c voltage to the required direct current for precision control of the drive motors.

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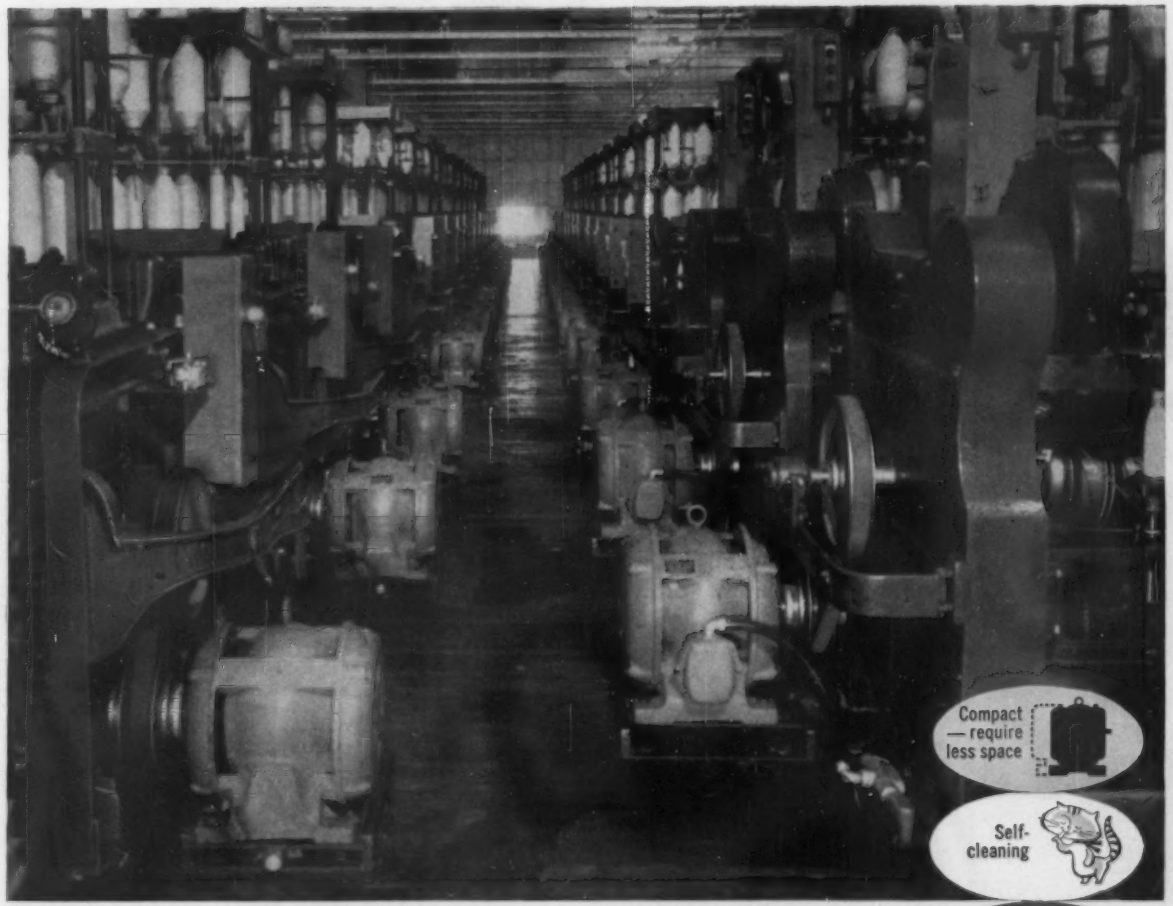

These motors expand floor space

Compact Louis Allis Self-Cleaning textile motors reclaim a foot of width per motor-alley installation

Here's your chance to beat the space squeeze in your mill: Louis Allis compact, space-saving type KT self-cleaning textile motors are a half-foot shorter than other designs. You gain a foot of usable space between motor lines . . . a yard per six rows of motors.

With this added width, your motor alley becomes a usable aisle. Personnel have ready access to equipment for faster, safer servicing. Or the aisle can be used to simplify materials handling to and from machines.

Reclaimed space permits rearrangement of your machines to improve efficiency and to increase capacity. This more than compensates for the small additional cost of these special motors. With these compact motors in your motor alleys, you can gain enough space to install an additional line of spinning frames, roving frames, cards, pickers, slubbers, or other machines.

In addition, the Louis Allis two-torque "soft start" design gives you that easy start so vital to reducing "ends down" time when handling untwisted ends on roving frames.

These Louis Allis motors are self-cleaning. Dust and lint cannot adhere to their extra-smooth surfaces . . . effective ventilation and open-end design pass lint through easily. And skewed rotor design reduces the noise level—important in multiple-motor installations.

For additional information, contact your Louis Allis District Office and ask for Bulletin 801. Or write The Louis Allis Co., 443 E. Stewart St., Milwaukee 1, Wis.

LOUIS ALLIS

MANUFACTURER OF ELECTRIC MOTORS AND ADJUSTABLE SPEED DRIVES

MAINTENANCE COSTS

slashed

with new Warner & Swasey PLASTIC-BONDED FALLER BARS at Caron Spinning Company

Nineteen Warner & Swasey Pin Drafter Intersecting Draw Frames and three Converters produce 24 hours a day at Caron Spinning Company, Robesonia, Pennsylvania.

● Just 57 faller bars had to be repinned during 15 months' production—average cost, just 7¢ a day per Pin Drafter®. And at Caron's Robesonia, Pennsylvania, plant the four new single head, dual delivery Pin Drafters have been used 24 hours a day, 5½ days a week throughout this time. They produce a variety of synthetic and blended sliver.

Resilient, flat pinned Plastic-Bonded Faller Bars are ideal companions for these new, high speed Warner & Swasey Pin Drafters. Their development is another example of Warner & Swasey's continuing program to provide the textile industry with equipment for faster, lower cost production.

If faller bar maintenance is cutting into your profits, or if you would like more information about the application of our machinery to your work—Pin Drafters, Warner & Swasey-Pacific Converter, Warner & Swasey-Sulzer Weaving Machine®, or Whirlwind* Twister-Winder—it will pay you to call in our nearest Field Engineer.

® Reg. U. S. Pat. Off. * Trademark

SALES OFFICES

Main Office and Factory: 5701 Carnegie Ave., Cleveland 3, Ohio
61 Rivulet Street, North Uxbridge, Mass.
121 11th Street, N. E., Atlanta 3, Ga.
Suburban Square Bldg., Ardmore (Philadelphia), Pa.
624 Pecan Avenue, Charlotte 1, N. C.

YOU CAN PRODUCE IT BETTER, FASTER, FOR LESS...WITH A WARNER & SWASEY

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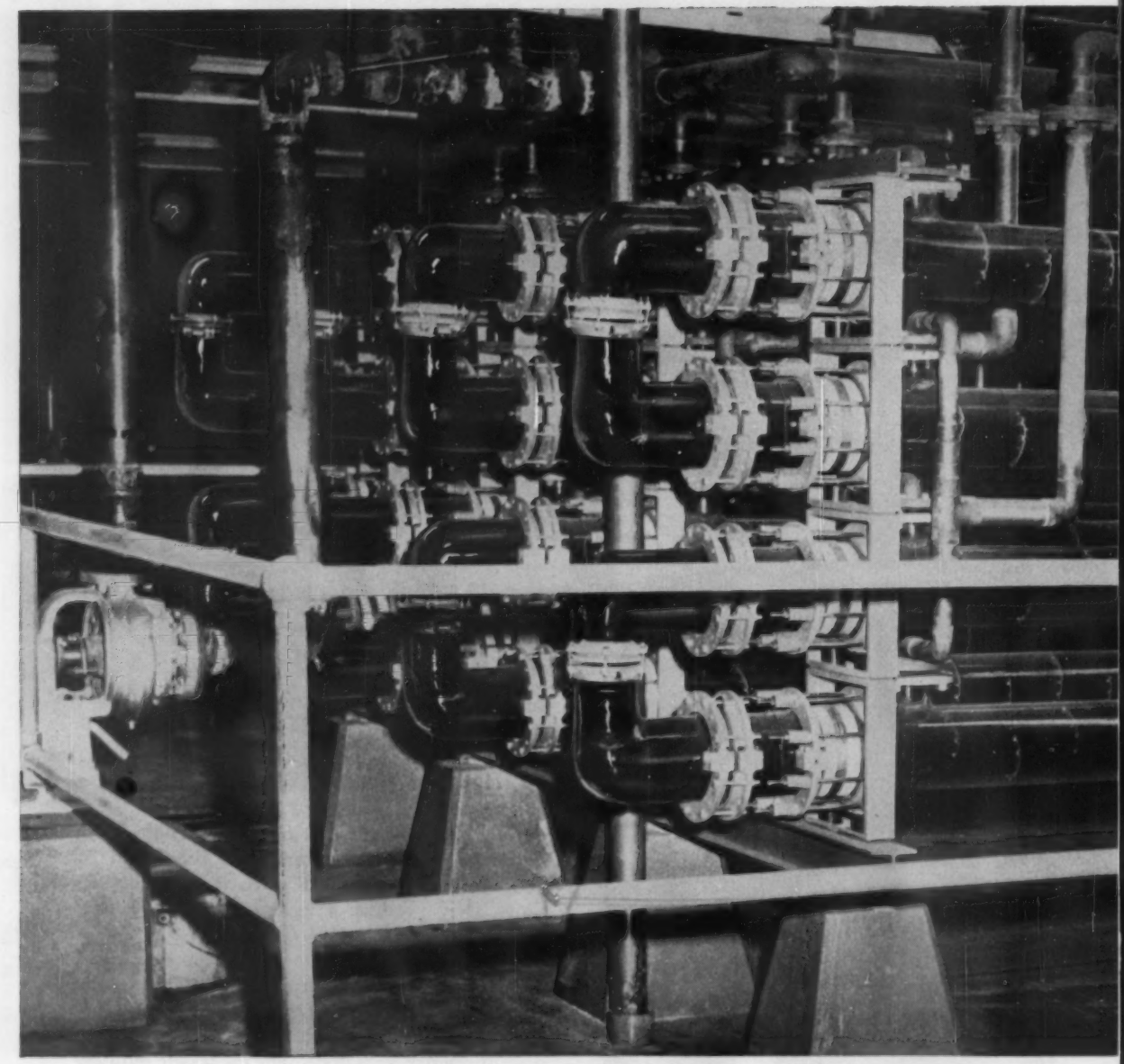

Glass puts lost b.t.u.'s back to work

16 standard Heat Exchangers save over 7½ million b.t.u./hour from hot corrosive wastes

Heat was going down the drain at the Sevier, North Carolina finishing plant of The American Thread Company . . . and because of overly high peak loads on the boilers something had to be done about it.

If the heat could be picked up from the dye liquor waste and used to preheat the incoming fresh water, the problem would be solved. The difficulty was the corrosive nature of the waste.

PYREX® heat exchangers were the natural choice. In the first place, because the corrosive liquid comes in contact with nothing but glass and the resistant gaskets, corrosion is no problem. The glass is light and easily handled. It's easily installed, easily replaced. Heat transfer is high. Sediment build-up is slowed up. If it does occur, its presence is immediately apparent because of the transparency of PYREX pipe.

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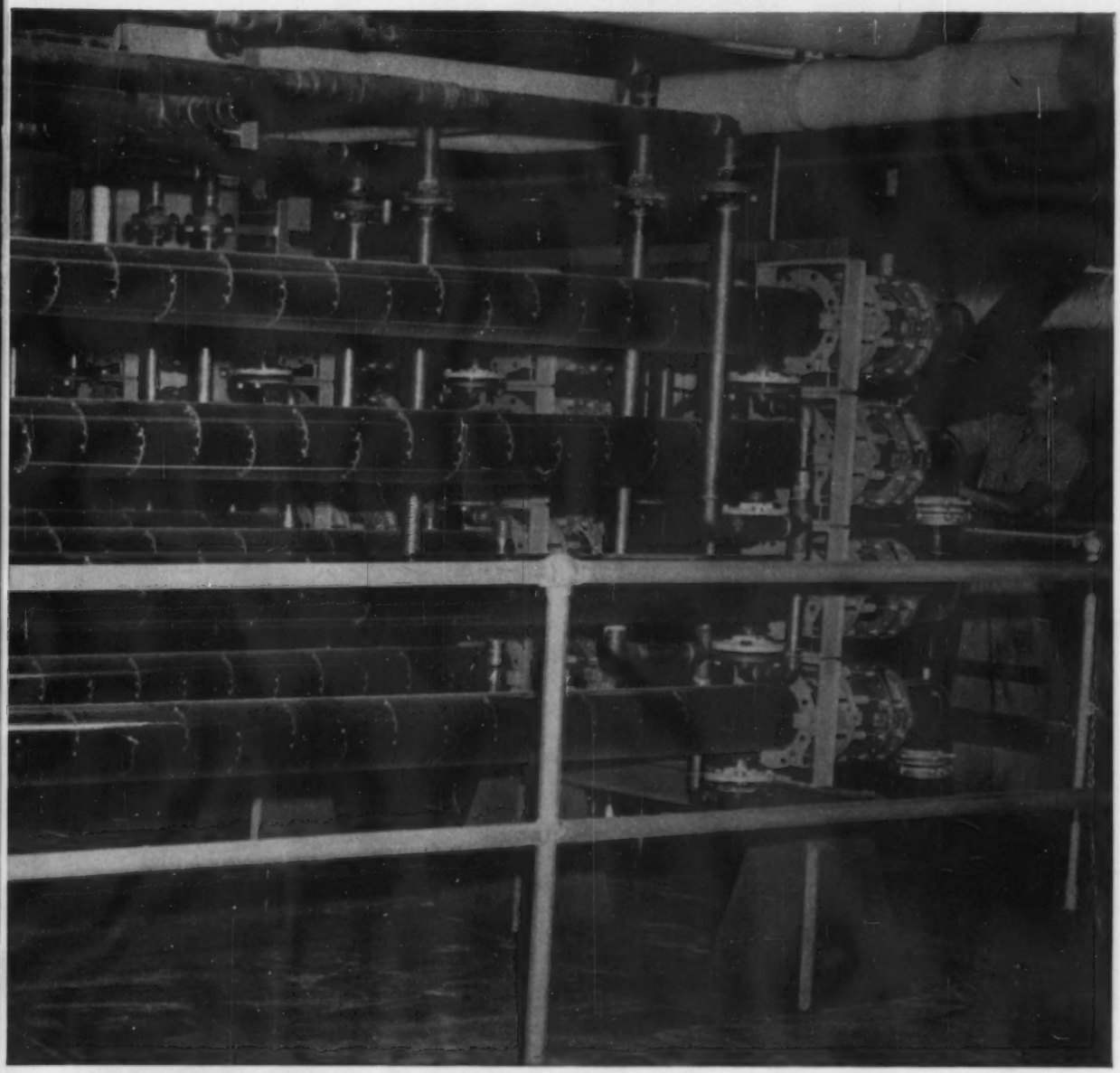


16 50 sq. ft. standard PYREX brand shell and tube exchangers are stacked four high and spaced in four groups horizontally. Corrosive dye liquor makes passes through the tubes of all four units. Fresh water makes one pass through the shell of each unit.

If you can use the properties of PYREX brand glasses to effect similar savings in your plant operations, why not send for Corning's detailed engineering reference guide, "Design Manual for PYREX brand Modular Shell and Tube Heat Exchanger Units." Just send coupon, or write Plant Equipment Sales, Corning Glass Works, Corning, N. Y.

CORNING GLASS WORKS
76 Crystal Street, Corning, New York

Please send me Bulletin PE-33, "Design Manual for PYREX brand Modular Shell and Tube Heat Exchanger Units."

Name.....

Title.....

Company.....

Street.....

City.....Zone.....

State.....

Corning means research in Glass

CORNING GLASS WORKS, 76 Crystal Street, Corning, N.Y.

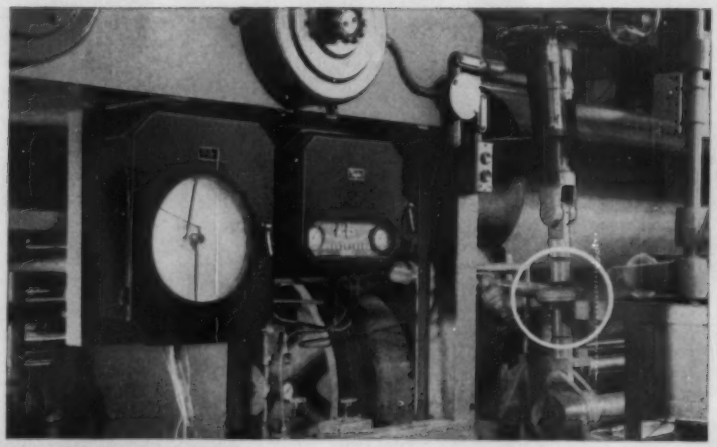
UNIFORM SQUEEZING

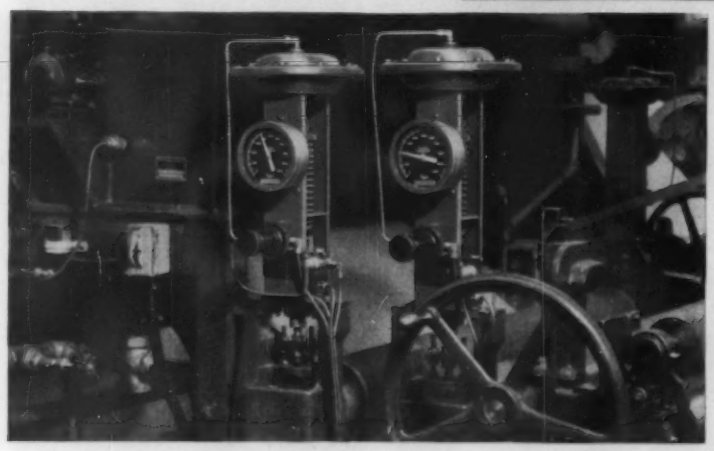
cuts costs in wet finishing and slashing

For Dye Padder Control

Uniform dyeing is easy with this Taylor Dye Padder Control System, because you can adjust Squeeze Roll Pressure accurately from side to side. A Taylor Volumetric Load Recorder shows pressure exerted across squeeze rolls. A FULSCOPE* Liquid Level Controller maintains the level of the dye in the dye box, assuring uniform immersion of the cloth.

*Reg. U.S. Pat. Off.





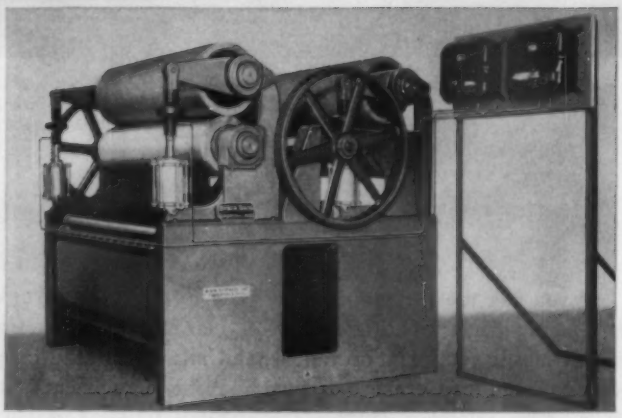
For Slasher Size Box Control

No soft spots with Taylor's Squeeze Roll Pressure Control, in use here on a high speed Rayon Slasher in a well known Southern Mill. Out-of-round roll conditions are quickly detected, and uniform penetration of size is insured, because Volumetric Load Elements measure actual pounds of pressure applied directly to the roll—unaffected by friction or leaking air.

For Mangle Control

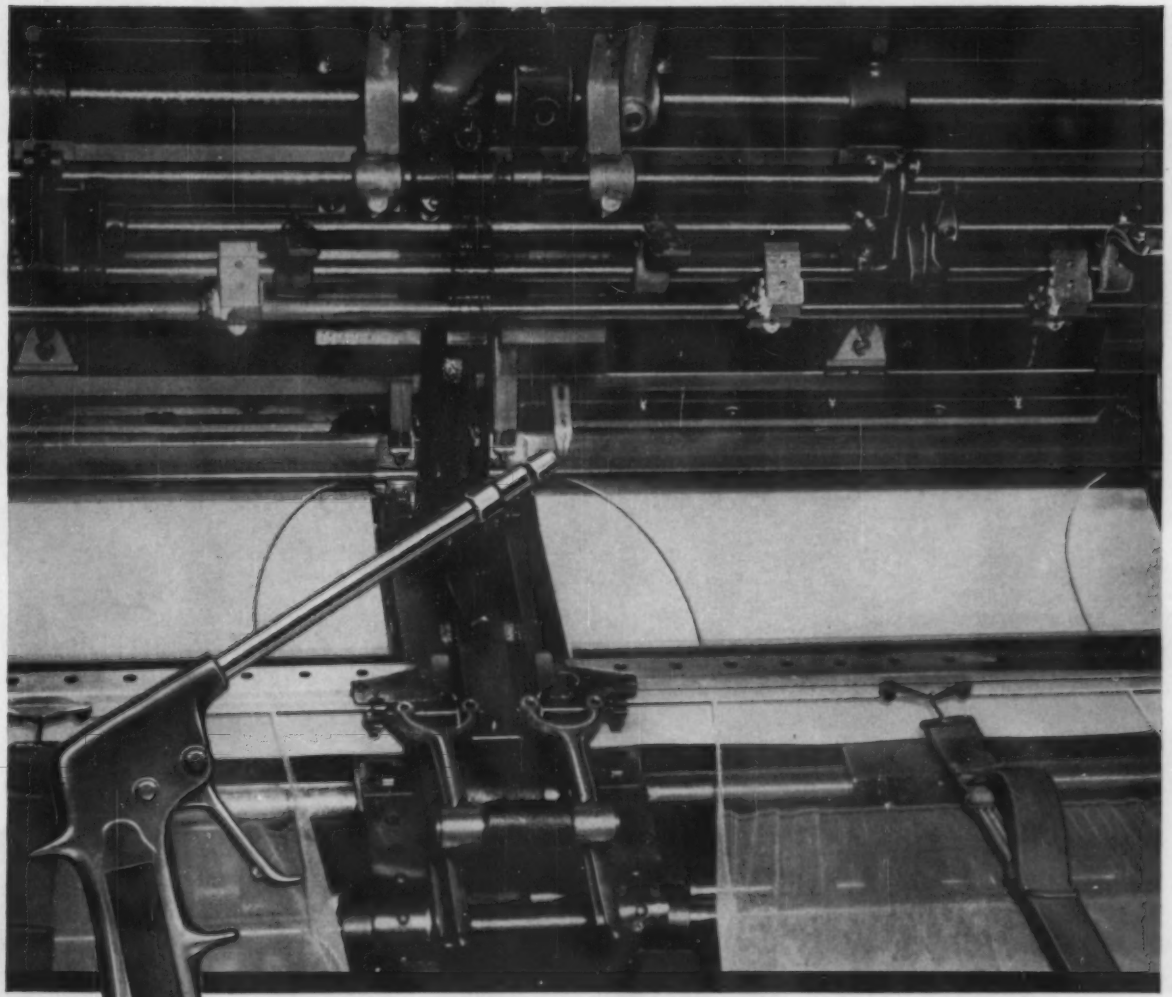
Taylor Volumetric Elements on this Tandem Mangle measure exact roll or nip pressure, let you duplicate the squeeze you want for any type of cloth. Actual pressure applied to rolls is measured by the volumetric elements right in the line of thrust . . . one each end of each roll. Two Taylor Indicators let you check uniformity of pressure, tell you exactly how much pressure is being exerted.

Ask your Taylor Field Engineer, or write Taylor Instrument Companies, Rochester, New York, or Toronto, Canada.



VISION • INGENUITY • DEPENDABILITY

Taylor Instruments MEAN ACCURACY FIRST



Keeps Needles Clean!

Keep rust and size deposits out of your knitting machines! Switch to Sinclair CRYSTOIL. This superior needle oil is specially formulated for knitting operations: It keeps needles free from rust, and not only resists encrustation, but *will actually remove size or crust build-up.* Fewer applications of oil are needed between sets. Moreover, the light color pays an extra bonus in finishing operations . . . scouring is minimized when CRYSTOIL has been used!

Look into the advantages of Sinclair CRYSTOIL or CRYSTOIL LIGHT (for the finer gauge machines). Call your local Sinclair Representative or write Sinclair Refining Company, Technical Service Division, 600 Fifth Avenue, New York 20, N. Y. *There's no obligation.*

SINCLAIR

CRYSTOIL NEEDLE OILS

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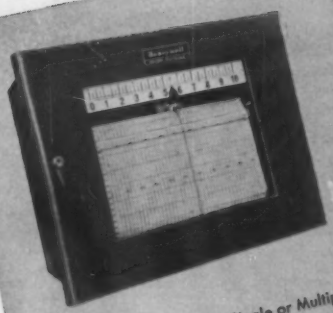
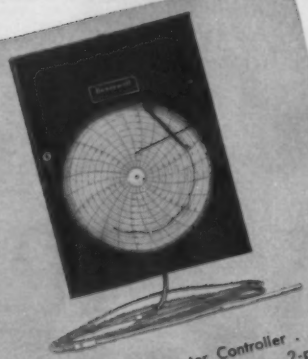


Strip Chart Recorder—Single or Multiple Point . . . Records all types of variables. Choice of pen speeds and chart speeds.

Recording Wet and Dry Bulb Thermometer Controller . . . Electric or pneumatic control, both pens.

Integral Cam Programmer . . . Enables complete 24- or 168-hour program to be precast. Electric or pneumatic control on one or both pens.



Recording Thermometer Controller . . . Wide choice of control systems. 2-pen recorders available with choice of control.

Circular Chart Recorder . . . Has large 28" indicating scale, is available with electric or pneumatic control. Extremely accurate and dependable.

One -

Small-Case Indicating Pressure and Temperature Controllers . . . Require less than 1 square foot of panel. Ranges from —40 to 1000 F. Pneumatic control.

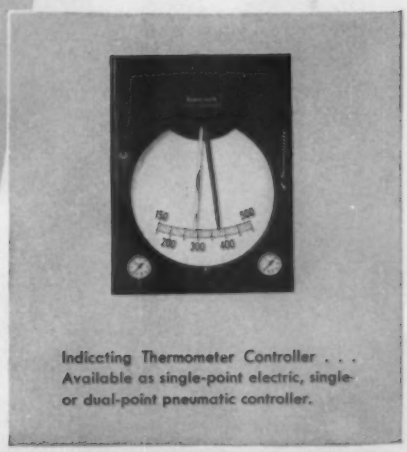
Hair Hygrometer-Thermometer . . . Records humidity and temperature on one chart. Spring wound or synchronous electric chart drive.

Flow Meter . . . Available with electronic integrator to totalize flow as indicated on a direct-reading counter. For accounting and control.

Recording Pressure or Liquid Level Controller . . . Wide choice of control systems. Control on either or both pens of 2-pen model.

Moist-O-Graph . . . For slashers and pickers. Large, easily-read dial sets for practically any combination of fibers, sizes or blends.

Diaphragm Control Valve—Series 800 . . . For heavy-duty service. In standard sizes from 1 to 8-inch single seated—to 12-inch double seated.



Indicating Thermometer Controller . . . Available as single-point electric, single- or dual-point pneumatic controller.

Stop SHOPPING...

WHETHER it's temperature, pressure, pH, flow, liquid level, humidity, or any other important variable you want to measure or control, Honeywell makes just the instrumentation for you. Our line is as broad as the textile industry's requirements . . . you can choose exactly what you need.

This means you get all the instrumentation your process requires from a single source, so there is undivided responsibility for the complete installation. And you are assured that equipment suggested for your process is recommended without bias. With a complete line there is no need to over-sell or under-equip.

For the new process, the modernization program, or a replacement problem, find out how Honeywell can go to work . . . anywhere in the textile industry. Call your nearest Honeywell sales engineer. He's as near as your phone.

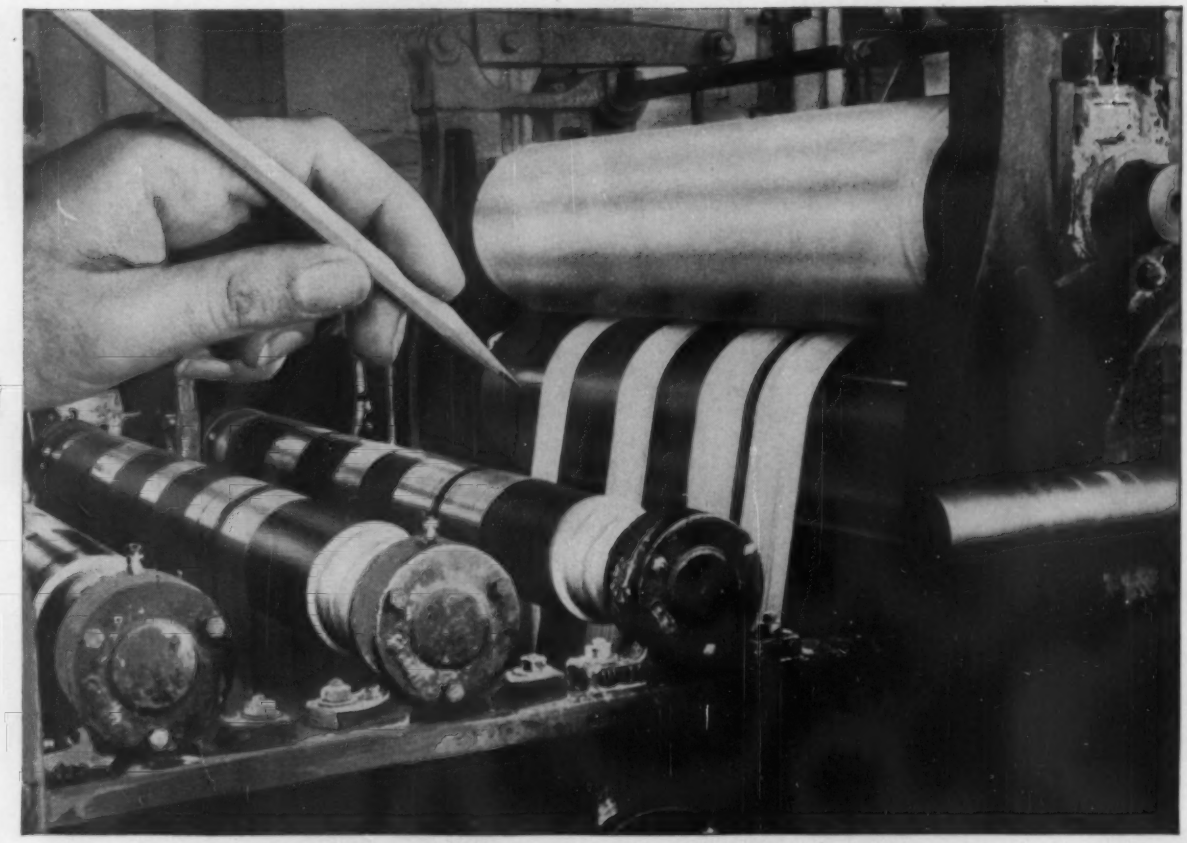
MINNEAPOLIS-HONEYWELL REGULATOR Co., *Industrial Division*, Wayne and Windrim Avenues, Philadelphia 44, Pa.—in Canada, Toronto 17, Ontario.

H HONEYWELL

MINNEAPOLIS **Honeywell**

BROWN INSTRUMENTS

First in Controls



Longer, Trouble-Free Service with MANHATTAN Rubber Covered Rolls

Advanced developments in roll cover compounds make Manhattan Rubber Covered Rolls last longer and reduce machine downtime for replacement. A superior rubber-to-metal bond, exclusive with Manhattan, makes separation of the rubber roll cover from the metal core virtually unknown. Roll failures due to cracking, hardening or corrugation are eliminated.

The most up-to-date precision roll grinding and vulcanizing facilities permit experienced Manhattan craftsmen to cover textile rolls for your specific production requirements . . . and insure accuracy of dimension within .002". You get permanent, uniform and correct density for uninterrupted finishing operations under all working conditions.

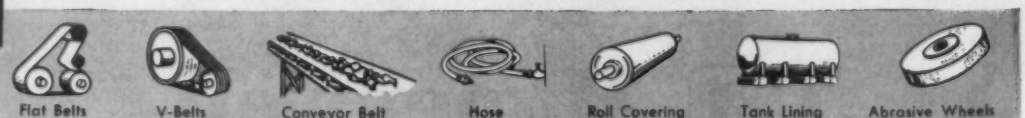
Over 60 years' experience in covering and handling rolls for the textile industry serves you when you discuss your job requirements with an R/M roll covering specialist. Let him show you how you can get longer, trouble-free service . . . "More Use per Dollar" . . . with Manhattan Rubber Covered Rolls.

RM 617

ROLL COVERING PLANTS AT PASSAIC, N.J.—NEENAH, WIS.—NORTH CHARLESTON, S.C.

MANHATTAN RUBBER DIVISION—PASSAIC, NEW JERSEY

RAYBESTOS-MANHATTAN, INC.



Other R/M products include: Industrial Rubber • Fan Belts • Radiator Hose • Brake Linings • Brake Blocks • Clutch Facings • Asbestos Textiles • Packings • Engineered Plastic, and Sintered Metal Products • Laundry Pads and Covers • Bowling Balls

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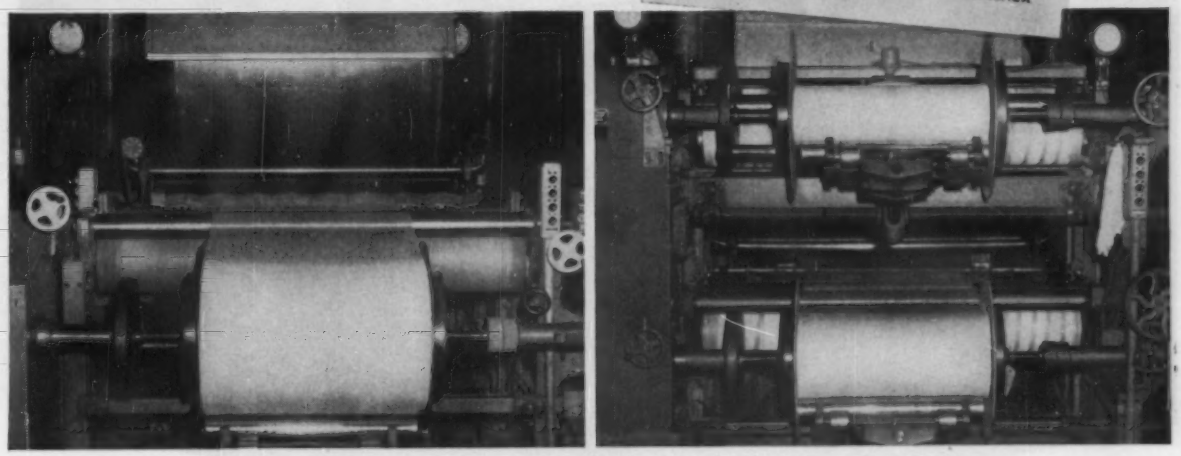
VICKERS® HYDRAULIC SLASHER DRIVES

WIND BETTER LOOM BEAMS FASTER

For

ANY TENSION • ANY SPEED • ANY SET
ANY YARN • ANY DIAMETER • ANY WIDTH
ANY HORSEPOWER • ANY DOUBLE HEAD
ANY SINGLE HEAD • ANY SLASHER



West Point Foundry & Machine Company single and double head slashers with Vickers Hydraulic Drives.

This is the slasher drive that can really meet *all* your needs . . . flexibility is sufficient to cover all known conditions of slashing. Now your yarn and your beams can be wound exactly the way you want them . . . and quality is always the same.

Design is unusually compact . . . the drive requires no floor space outside of the slasher head end frame dimensions. Automatic overload protection and dependability are important features. Completely sealed and inherently self-lubricated, there is no need for oiling and greasing.

ONLY VICKERS HYDRAULIC SLASHER DRIVES HAVE ALL THESE ADVANTAGES:

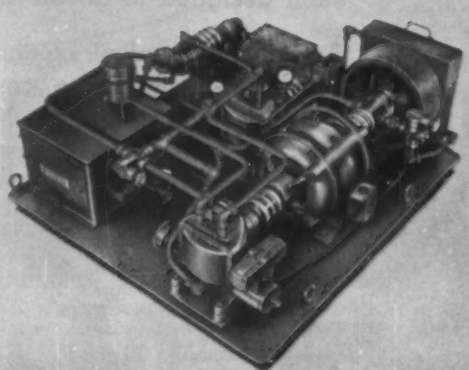
1. Better Tension Control
2. Complete Speed Range
3. Smoother Acceleration and Deceleration
4. Selective Creep Speeds
5. Better Response
6. Reduced Operating Costs

For further information about Vickers Hydraulics on slasher drives, write for Bulletin 55-71. For information regarding application of Vickers Hydraulics to general textile machinery, write for Bulletin 54-66.

VICKERS INCORPORATED
DIVISION OF SPERRY RAND CORPORATION
Machinery Hydraulics Division
ADMINISTRATIVE and ENGINEERING CENTER
Department 1588 • Detroit 32, Michigan

Application Engineering Offices: • ATLANTA • CHICAGO • CINCINNATI CLEVELAND • DETROIT • GRAND RAPIDS • HOUSTON • LOS ANGELES AREA (El Segundo) • MINNEAPOLIS • NEW YORK AREA (Summit, N.J.) PHILADELPHIA AREA (Media) • PITTSBURGH AREA (Mt. Lebanon) PORTLAND, ORE. • ROCHESTER • ROCKFORD • SAN FRANCISCO AREA (Berkeley) • SEATTLE • ST. LOUIS • TULSA • WASHINGTON • WORCESTER
IN CANADA: Vickers-Sperry of Canada, Ltd., Toronto

STANDARD VICKERS® HYDRAULIC SLASHER DRIVE PACKAGE



ENGINEERS AND BUILDERS OF OIL HYDRAULIC EQUIPMENT SINCE 1921

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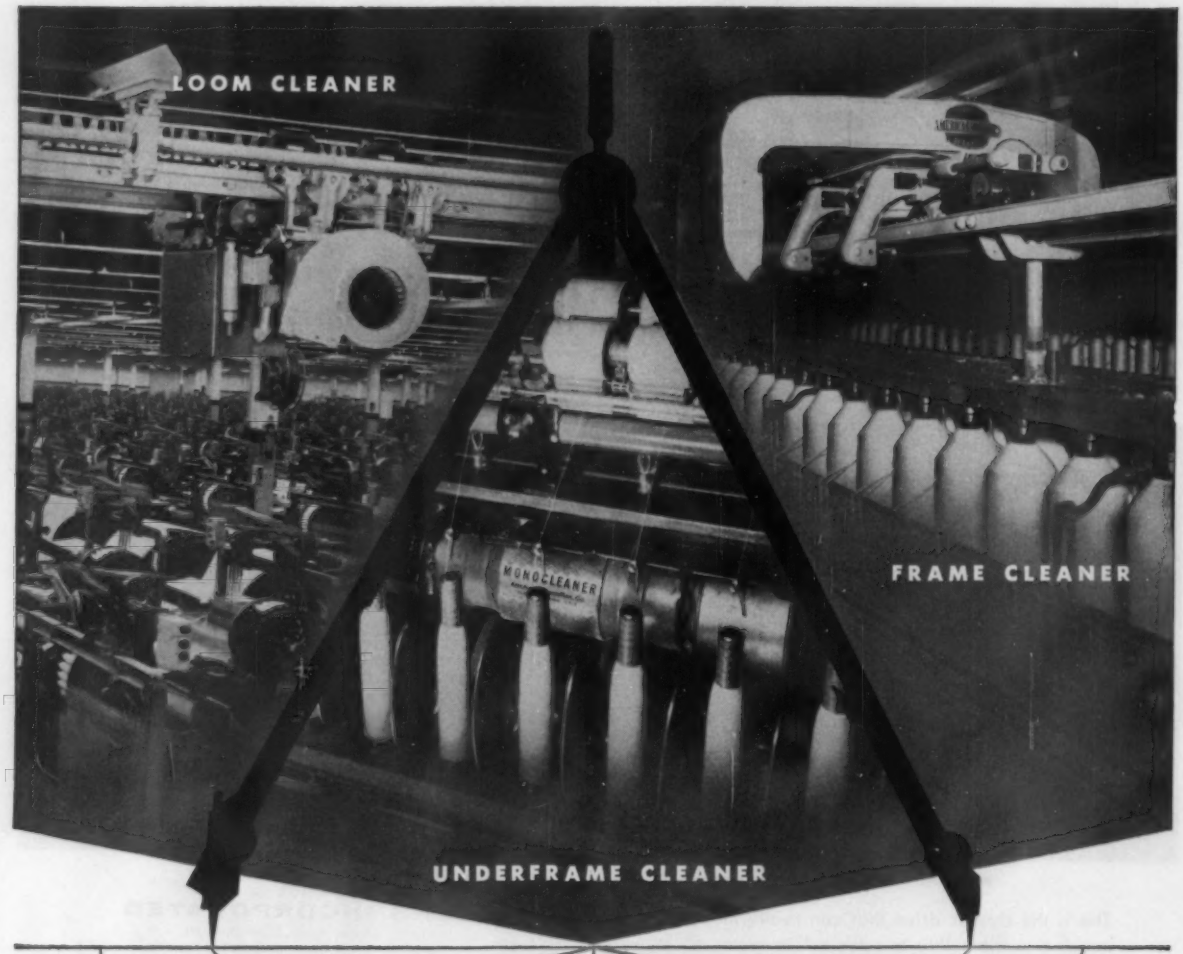

ENGINEERED *Automatic Cleaning*

American MonoRail automatic cleaning equipment is engineered to meet specific cleaning problems. There is a special cleaner for ceilings, frames, underframes, looms—each designed to do the specific job required.

American MonoRail cleaning equipment is built for long-time, low-maintenance cost operation. Get in touch with your nearby American MonoRail engineer for all your cleaning problems, or write to us for the name of your nearest representative.

Member of American Textile Machinery Assn.

AMERICAN OVERHEAD HANDLING EQUIPMENT

MONORAIL COMPANY

13108 ATHENS AVENUE • CLEVELAND 7, OHIO

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Heard the Latest J-Box News?

1956 figures show the Becco J-Box to be preferred by 70% more bleacheries than use any other type. From Europe, Mexico, South America, India and every part of our own country – where time, space and efficiency are criterions of profit – we constantly receive enthusiastic reports of users' satisfaction with bleaching ranges of Becco design.

The Becco J-Box is a better box! Time and the experience of users have proved its superiority. The heating of moistened goods *in the box* contributes to speed and efficiency of operation.

The Wet J-Box – a patented Becco design – has contributed further to efficiency. Goods slide more easily through the J. Power requirements are lower. Strain on goods is sharply reduced. The Wet J-Box is an adaptation which can be applied at very low cost to ranges already in place.

Send for information or ask a Becco field engineer. Take advantage of Becco's 30 years' research in the application of peroxygen chemicals to American industry.

BECCO CHEMICAL DIVISION
Food Machinery and Chemical Corporation
Station B, Buffalo 7, New York

BUFFALO • BOSTON • CHARLOTTE, N.C. • CHICAGO
NEW YORK • PHILADELPHIA • VANCOUVER, WASH.

Progress in Peroxygens® **BECCO**

fmc FOOD MACHINERY AND CHEMICAL CORPORATION ®

FMC CHEMICALS INCLUDE: **BECCO** Peroxygen Chemicals • **WESTVACO** Phosphates, Barium and Magnesium Chemicals • **WESTVACO** Alkalis, Chlorinated Chemicals and Carbon Bisulfide • **NIAGARA** Insecticides, Fungicides and Industrial Sulphur • **OHIO-APEX** Plasticizers and Chemicals • **FAIRFIELD** Pesticide Compounds and Organic Chemicals

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How Much Per Traveler-Pound?

The true test of a traveler is the number of pounds of top quality yarn which can be spun or twisted with it before it wears out. The more yarn produced, the lower your cost per traveler-pound.

Millmen who keep a sharp eye on production costs always judge travelers on this traveler-pound rating. And that's why so many choose Victor Travelers for spinning or twisting.

Victors consistently cost less per traveler-pound for two reasons. First, because there are no better travelers made, by any test of quality and uniformity. Second, because Victor Service Engineers, all mill-trained men, can quickly grasp your special problems, and come up with the right answer.

They can not only recommend the *right* traveler, but can often make other suggestions for improving your quality and production, — whether you are running conventional fibers, synthetics, or blends.

Plan now to talk to a Victor man about your costs per traveler-pound. Write, wire, or phone the nearest Victor office . . . for prompt service.

•

VICTOR Ring Travelers

VICTOR RING TRAVELER DIVISION
OF SACO-LOWELL SHOPS

PROVIDENCE, R. I. . . . 1 Sabin St. . . . . Tel. DExter 1-0737

GASTONIA, N. C. . . . 914-916 East Franklin Ave. . . . Tel. UNiversity 5-0891

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...for a new Textile Machine going into production or expanding Textile Production to meet growing demands–

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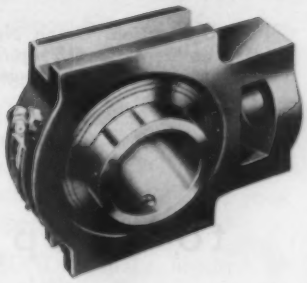
BALL BEARING UNITS

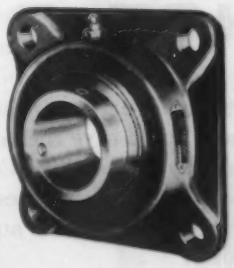
provide the quality features you need!

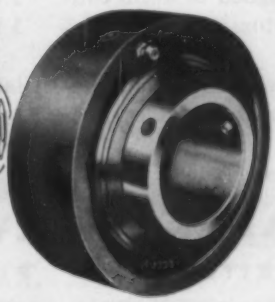
As an industry consuming approximately one-tenth of all the nation's horsepower and a top ranking user of electric motors and major machinery—the textile industry has become a business of precision. Where twenty years ago anti-friction bearings were used comparatively little, today precision bearings are a vital necessity.

SEALMASTER factory representatives and distributors have been working hand in hand with machinery manufacturers and mill operators in development of new and rebuilding of existent textile machines.

SEALMASTER's exclusive combination of features is particularly advantageous to the textile industry. Find out today what they mean to you!







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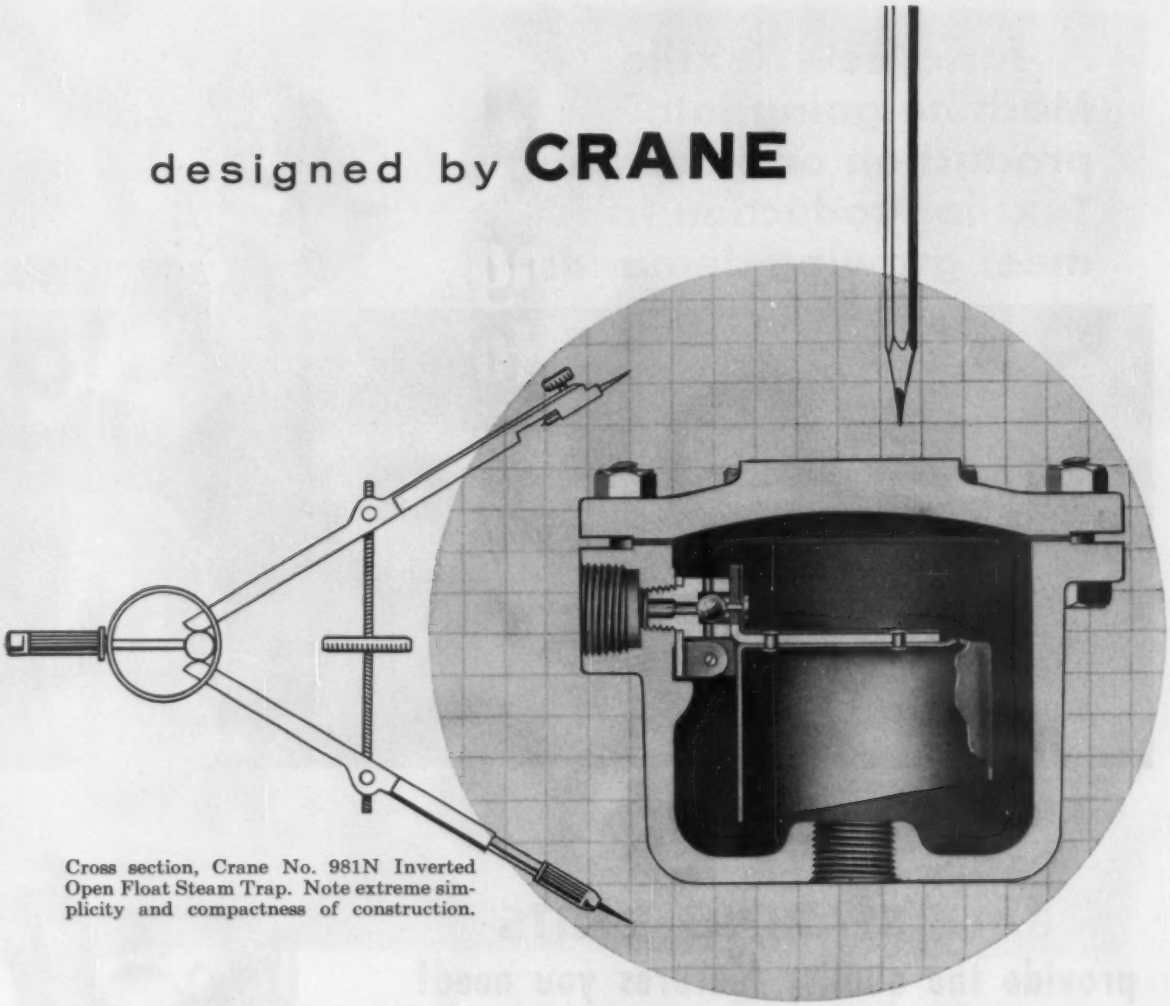

Cross section, Crane No. 981N Inverted Open Float Steam Trap. Note extreme simplicity and compactness of construction.

to keep your steam lines

HOT, DRY and EFFICIENT

With an apparatus heated or operated by steam, you'll save fuel and insure operating efficiency by installing Crane Inverted Open Float Steam Traps—designed to drain condensate accumulation automatically and instantly.

The exceptionally rugged, simple construction of Crane Steam Traps provides high discharge capacities in relation to their size—permitting more compact installations. They are available in working pressures from 1 to 300 pounds saturated steam, sizes ½ to 1 inch.

For literature giving ordering and installation instructions, see your Crane Representative or write to address below.

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Dont risk profit with a tube unfit for the job!

There's a big difference between using *a make-shift* tube and using a SONOCO tube *made especially* for the job at hand. This could mean the difference between profit and loss.

SONOCO has the "know how" of tube design and production, the result of nearly 60 years of research and experience in the manufacture of all types of paper tubes for textiles. This is your assurance that SONOCO can furnish a tube to fulfill your special requirements.

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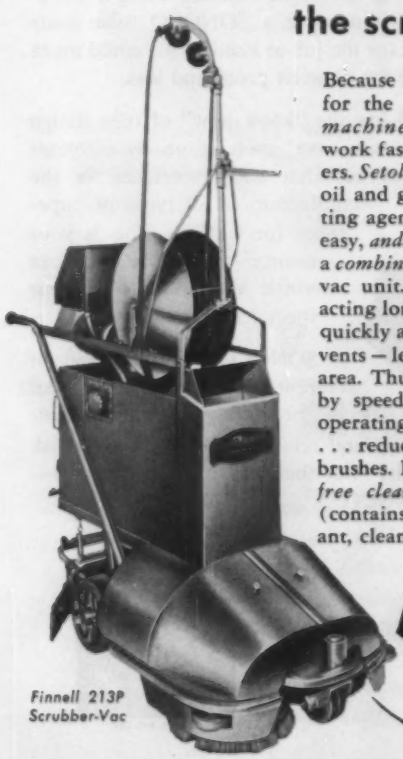
Setol Cleanser HAS WHAT IT TAKES
TO MACHINE-SCRUB OILY FLOORS—

Faster cleaning action!

Cuts operating time of the scrubbing machine

Because *Setol* is specially compounded for the greater speed of *combination-machine-scrubbing*, it must *and does* work faster than average alkaline cleansers. *Setol* saponifies *and emulsifies* grimy oil and grease *instantaneously*. The wetting agent in *Setol floats the oil* for fast, easy, *and thorough* removal by the vac of a *combination machine* or with a separate vac unit. And because *Setol* stays fast-acting longer—does not spend its strength quickly as do ordinary oil and grease solvents—less is required to clean a given area. Thus *Setol* saves on materials and, by speeding the cleaning process, cuts operating time of the scrubbing machine . . . reduces labor costs . . . and saves on brushes. Best of all, *Setol gets floors oil-free clean!* Also acts as a disinfectant (contains pine oil), and leaves a pleasant, clean aroma.

- **A constant, fast-acting cleanser for machine-scrubbing cement, wood, wood block, metal, stone, and terrazzo floors**
- **Consistent use on cement floors prevents cement dusting . . . provides a finish that helps seal out waste materials**



Finnell 213P Scrubber-Vac

Applies cleanser, scrubs, and picks up — in ONE operation!

For demonstration, consultation, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 190[c] East Street, Elkhart, Indiana. Branch Offices in all principal cities of the United States and Canada.

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Originators of Power Scrubbing and Polishing Machines

Everything FINNELL for Floor Care

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help cut most of "the blues" out of denims

Most of the "blue notes" are taken out of weave rooms running on denim, where the looms are equipped with Veeder-Root Cut Meters.

Cuts are uniform in length, which means many advantages in dyeing, finishing and converting. What's more, your customers like it.

Double cuts can be run, instead of single cuts.

Hard-to-see cut marks are eliminated, so weavers can concentrate on quality and production. You don't miss what you don't need!

Have your Veeder-Root representative show you exactly how Veeder-Root Cut Meters can save you time and money, and protect your fabric-quality. Write:

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In textile finishing plants everywhere, R & L equipment has for years been proved best by the only conclusive test — its record for producing high quality in consistently economical operation. Familiar with high standards because we set them, we also know your equipment needs and in our own field we answer them all. Check through the list to see how many ways we can serve you!

A. Continuous Crusher. B. Stainless Steel Hy-Temperature Stock Dyeing Machine. C. Stainless Steel Atmospheric Pressure Stock Dyeing Machine. D. Stainless Steel Fulling Mill. E. Derby Dry Cleaner. F. Dolly Cloth Washer.

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- Caustic Washers
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- Continuous
- Semi-continuous

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- Dye Becks
- Dye Kettles
  - Piece Dye Kettles
  - Rug Dye Kettles
  - Sample Dye Kettles
  - Stock Dye Kettles
    - Standard
    - Hy-Temperature
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Dryers
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- Cloth
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Pusher Mills

Reels

Rolls
- Miscellaneous
- Fulling Mill
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- Wood
- Rubber
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  - Open Width

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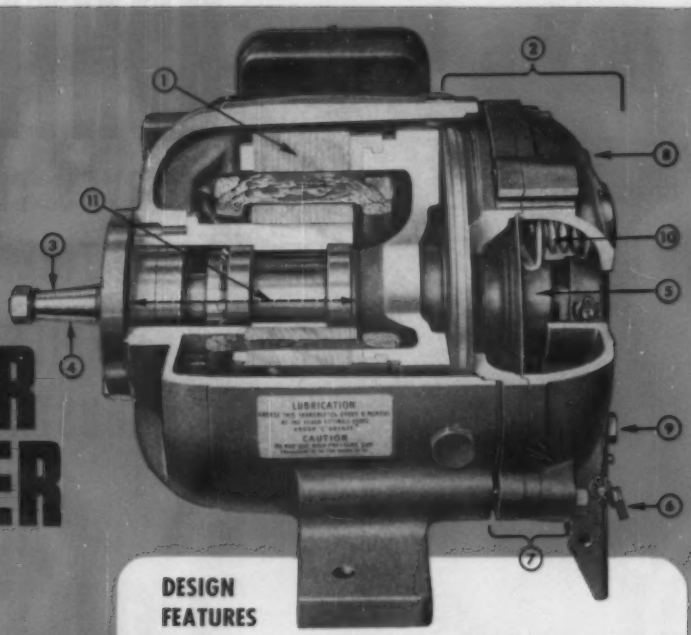
"BA" POWER TRANSMITTER

For Draper Looms

Exclusive new design features mean . . . *consistent* quality production . . . *peak* operating efficiency . . . minimum maintenance, labor and costs!

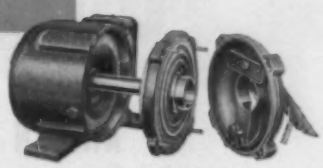


DESIGN FEATURES

High inertia inverted motor provides "stored energy" for smooth, fast starts and positive picking (maximum inertia with minimum size) . . . prevents regeneration.

STREAMLINED FRAME
Easy to clean. Roomy terminal box.

KINETIC BRAKING ACTION
(See Feature 6)



CLUTCH-ACTUATING BEARING—A strikingly new and improved method of mounting. (See Feature 5)

CLUTCH-BRAKE ASSEMBLY—Improved, simplified. Readily removable as a unit. (See Feature 2)

The original and only loom power transmitter . . . plus many outstanding design and construction features never before incorporated in a loom drive!

Over 40,000 Diehl Power Transmitters have been in continuous operation on DRAPER LOOMS—*most of them more than six years!* The "BA" Power Transmitter is even *more* compact, *more* streamlined, *more* efficient and *more* easily installed and serviced than its famous predecessor.

It's an inverted-type high inertia motor combined with a fast, positive clutch-brake mechanism. Note the exclusive design features—the clutch-actuating bearing mounting . . . the kinetic braking action . . . the unitized clutch-brake assembly. These important advancements mean increased production . . . improved cloth quality . . . lowered operating costs . . . fewer shutdowns. *Write, wire or phone today for full information.*

plus these outstanding Features

*2. **CLUTCH-BRAKE ASSEMBLY**—Improved and simplified for positive action and ease of adjustment. Removes readily as unit for maintenance, without disconnecting motor from loom frame.

3. **PINION**—Free accessibility for installation and maintenance.

4. **SHAFT**—Large diameter, alloy steel, heat treated—assures long life, eliminates need for outboard bearing.

*5. **CLUTCH-ACTUATING BEARING**—New diaphragm mounting for frictionless clutch action, positive radial rigidity of bearing . . . eliminates fretting corrosion . . . means full self-alignment of bearing for maximum life.

*6. **KINETIC BRAKING ACTION**—For rapid, accurate stops. Particularly desirable for center fork detection looms.

7. **CLUTCH AND BRAKE ADJUSTMENT**—Simple and convenient. Provides visible check on brake alignment.

*8. **CLUTCH-SETTING INDICATOR**—Built integral with unit for instantaneous external checking of clutch setting.

9. **SAFETY LATCH**—Built integral with unit. Prevents accidental engagement of clutch.

10. **CLUTCH-LOADING ASSEMBLY**—Internally located, hence tamper-proof.

11. **SHAFT-END BEARINGS**—Arrangement simplified and improved. Two ball bearings and an extra large roller bearing assure maximum life.

Exclusive feature—patent protected.

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(FROM GREENVILLE, SOUTH CAROLINA)

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The recent acquisition of the W. D. Dodenhoff Company of Greenville, South Carolina (Now James Hunter, Incorporated) establishes for the James Hunter Machine Co. complete service and sales facilities in the South on an extensive line of fiber blending and feeding machinery and textile finishing equipment.

JAMES HUNTER, INCORPORATED GREENVILLE, SOUTH CAROLINA

A SUBSIDIARY OF

JAMES HUNTER MACHINE CO. NORTH ADAMS, MASSACHUSETTS

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You Can't Find the Cost of a Valve on a Price List

With today's high maintenance expense, the cost of keeping a troublesome valve in repair can dwarf its original price in a few months' time. The minute a maintenance man touches a wrench to a valve, its cost is often doubled. That's why the purchasing trend is to *top quality* —the longest-lasting, most dependable industrial equipment on the market. And in the valve field, that means Lunkenheimer . . . famous for quality and maintenance-free service since 1862. The Lunkenheimer Company, Box 360 Annex Station, Cincinnati 14, Ohio.

The cost of a Lunkenheimer Valve gets smaller...and smaller...and smaller... with each passing year of dependable service

LQ600-150
150 lb. S. P.
300 lb. W. O. G.

LQ600-200
200 lb. S. P.
400 lb. W. O. G. 550°F.

¼ to 2 inches

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"The Evidence in the Case"
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HOW TO CUT MAINTENANCE

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THE ONE *Great* NAME IN VALVES

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Nearly every competitive advantage starts with the machine

The mill-proved full-fashioned story . . .

Builders of:

The "Reading" CK-A
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The "Reading 100"
Full-Fashioned Knitting Machine

The "Reading" Full-Fashioned
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Textile Spring-Beard Needles

Arrow Latch Needles

The Reading "100", with mill-proved automatic features, practically thinks for itself — automatic narrowing heads, automatic friction boxes, automatic two-carrier friction box for main and welt yarns, automatic welt bar unhooking, automatic thread separator. These new machines assure uninterrupted production, lower per dozen cost, and they *make it possible for an operator to earn more money*. Let us give you the mill-proved full-fashioned story.

The "READING 100"
Full-Fashioned Knitting Machine

Knitting Machine Division
TEXTILE MACHINE WORKS • READING • PENNA.
Reconditioning Plant: Asheboro, N. C.
Builders of Textile Machinery Since 1900

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Prices and Profits

Ask any textile man what the single most important factor in any textile business is, and he'll tell you, "Prices." Or he may put it, "There's nothing wrong with the textile industry that better prices won't cure."

That's true, of course. If people were willing to pay higher prices at any given time, mills could cover up any imaginable bungling or mismanagement—as they covered them up with wage cuts and "stretch-outs" before the mid-1930's.

But ask the next obvious question: "What determines prices?" and you begin to get strange answers. Probably not ten men in the whole industry would say, "*I* helped depress prices by overproducing, cutting prices, selling seconds, making deals with big houses, and dumping."

Not that you'd run into many who don't know full well that those things are always what ruins prices. But few will admit that they helped do them. Those who do admit it are always "forced" into it by "competitors" who did it first.

Workers and Competition Are Excuses

One of the readiest and most socially acceptable excuses for overproducing to the point of ruining prices is to hold workers.

That is a lame excuse. Every excess of production has to be corrected sooner or later; and before it's over workers have lost as much, perhaps more, wages than they would have lost if self-restraint had been practiced voluntarily.

Another ready excuse is competition. Most mills say they would practice restraint and sound business principles if other mills would.

That's more lame reasoning. A mill is in business for one thing: to make money, regardless of what its competitors do. Investment money that doesn't yield as good a return in textiles as it would somewhere else ought to be invested somewhere else—just as a worker's time and effort should be invested where they bring the best returns.

A mill management is managing money in the form of machinery, fiber, and working capital. It has no more right to mismanage that money than the management of a bank has to mismanage depositors' money.

Sales the Shibboleth

It is practically heresy nowadays not to try to solve all business problems with more and more sales. The postwar bandwagon certainly has been: cut costs, produce more, sell more.

Basically that is a sound business policy; but when a mill or an industry sacrifices reasonable profits on that altar, it is heading for disaster. Cut-rate sales of seconds, dumped first-quality goods, or deals with big houses fill textile needs just as well as bona-fide sales at a profit. The net result is that that much market has been killed and prices and profits have been squeezed that much.

Management should be prepared to resist the three greatest pressures it has: its own sales force, its own production force, and sharp-operating competitors. If any one of these three is allowed to call the shots, profits are going down the drain. Business is not simply making sales, or producing, or outshuffling competitors. If a reasonable profit does not result, it's not business at all; it's only futile activity in imitation of business.

O. M. Thomas

DYED TOW

A new chapter in the Turbo High-Bulk Story

Turbo high-bulking of dyed tow for new sweater effects, clearer, brighter colors is one of the exciting new uses for the Turbo Stapler. With dyed tow, you get all of the latent shrinkage desired for lofty hand and luxury feel in the finished garment.

The Turbo Stapler is proved in mill-operation for controlled fiber results. It heat-stretches, breaks and crimps the continuous, parallel fiber filaments to deliver an exceptionally even sliver. Denier can be altered, tensile strength increased, staple length controlled.

For full details on the Turbo Stapler and Fiber Setter, call us today or write for illustrated folder.

TURBO
SINCE 1929

TURBO MACHINE COMPANY
LANSDALE, PA.
Makers of precision Heat and Steam Setting Machines, Crimpers and Tow Processing Equipment

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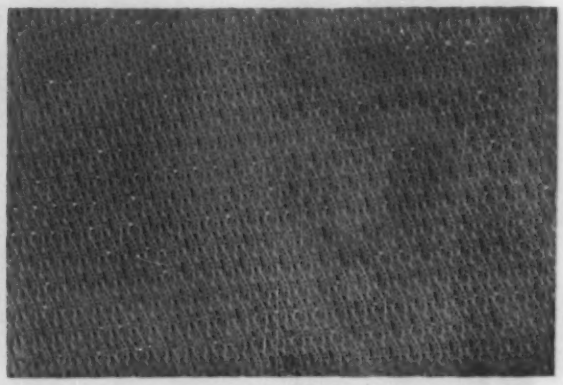
Textile World

Volume 107, No. 6. June, 1957



METALLIC YARNS have been improved over recent years so they can be successfully woven into upholstery fabrics (left) or knitted into dress fabrics (right). Problems in handling these yarns have largely been overcome, but new developments are on the way that might introduce other problems.

Special Report on METALLIC YARNS

- New uses are continually being found for modern metallic yarns, and new yarns are being introduced at a fast clip
- This report shows how these yarns are made, how they are processed, and how problems in handling them have been overcome

By JAMES H. BLORE, Associate Editor, TEXTILE WORLD

FABRICS SPLASHED WITH METALLIC yarns have been hot textile items for the last few years. Metallic-yarn consumption has increased about 15% every year for the last three years, and this increase is expected to continue for the next two years.

New uses are constantly being discovered for metallic yarns, and new types are being introduced to supplement and replace older types. Some of the latest metallic yarns include staple fibers for blending with natural and synthetic fibers, space-dyed yarns, metallized yarns, high-tenacity yarns, and yarns where one side is colored different from the other.

Up to 10 years ago, metallic yarns were limited to such items as ecclesiastical fabrics, tapestries, military badges, and a few novelty items. Today's metallic yarns are used in all types of apparel and home furnishings because they can be processed easier, they do not tarnish, they are softer, and they can be washed easily.

How Early Metallics Were Made

Early metallic yarns were made by beating fine gold, silver, or copper wire to a flat shape. These yarns were often run through a lacquer to resist tarnishing. Some yarns were twisted around strong threads such as two-ply cotton yarns.

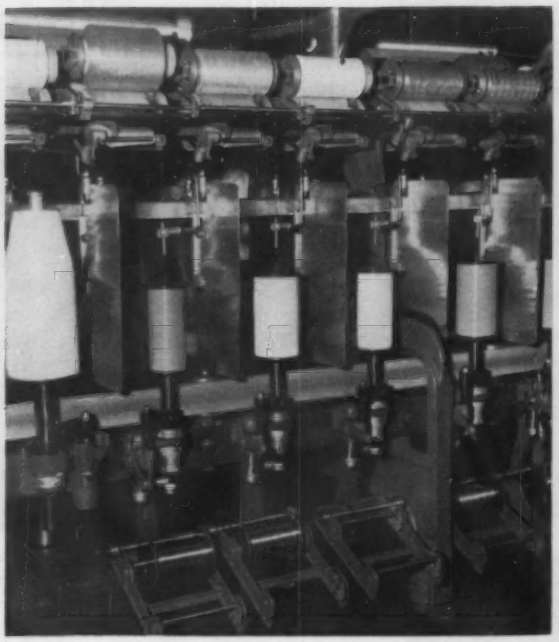
Modern metallic yarns had their beginning in 1939, when cellophane-covered aluminum foil was introduced. Production of this new material stopped during World War II, but several companies started making these yarns at the war's end.

Cellulose acetate butyrate became the next material to be used with aluminum foil, and this yarn is widely used today.

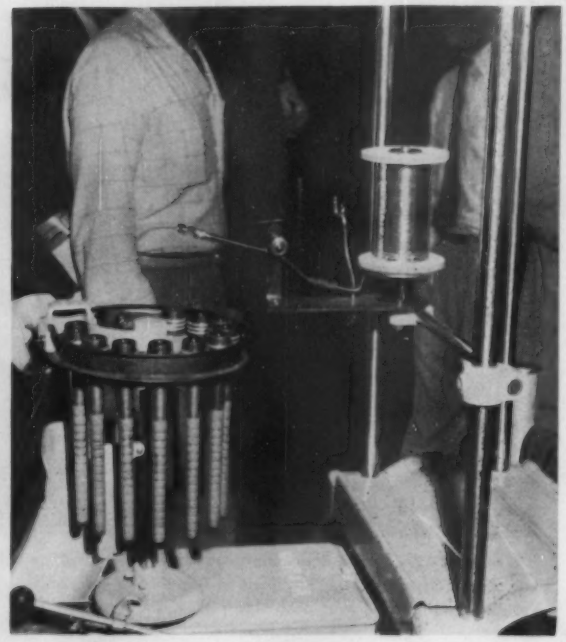
In 1950, Mylar was introduced and yarn made from this material is rapidly taking the place of butyrate. Mylar film has properties similar to Dacron yarn, which makes the metallic still easier to process and gives the yarn greater abrasion resistance, softness, and resistance to high temperatures.

Metallized Mylar is a late newcomer to this fast-growing family of new yarns. New processes allow particles of aluminum to be coated on Mylar film. This latest innovation has a bright future because yarns can be made very thin and pliable with more glitter than conventional yarns.

Butyrate yarns are made from rolls of 0.00045-in. thick aluminum foil, 20 ins. wide, laminated on each side with 0.00013-in. acetate-butyrate film.



SUPPORTING THREADS are twisted around the metallic thread to give greater strength and stability. The metallic yarn is run through the spindle holding nylon, Dacron, or Fortisan yarn.



WINDING PROBLEMS have largely been overcome by devices such as this control, which stops the spool to prevent yarn breaks and overruns and allows spindles to run faster.

The rolls of film are first coated with a synthetic-resin adhesive that contains colored pigments if gold or colors other than silver are required in the final product.

The coating solution is applied with two 6-in.-dia. rolls, and the coated foil is cured in a drying oven at 200 to 240° F. The excess adhesive is squeezed out, and the butyrate film is run onto the foil and rolled up.

The roll then goes through the machine a second time, and the other side of the foil receives an adhesive application and a lamination of butyrate film.

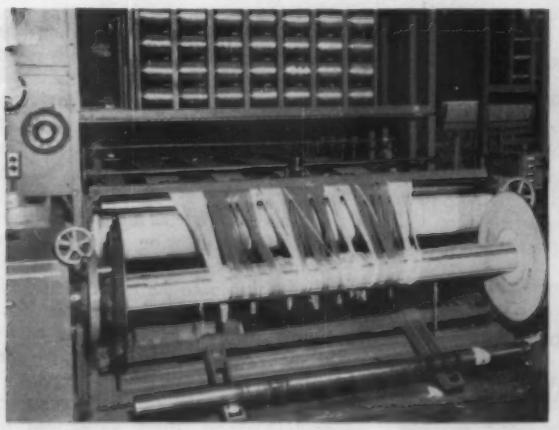
A multiple-knife machine then slits the roll of laminated foil into 16 strips 1¼ ins. wide. These strips are rolled on small beams that are taken to another cutting machine that produces the finished product.

Most Yarns Are 1/64 In. Wide

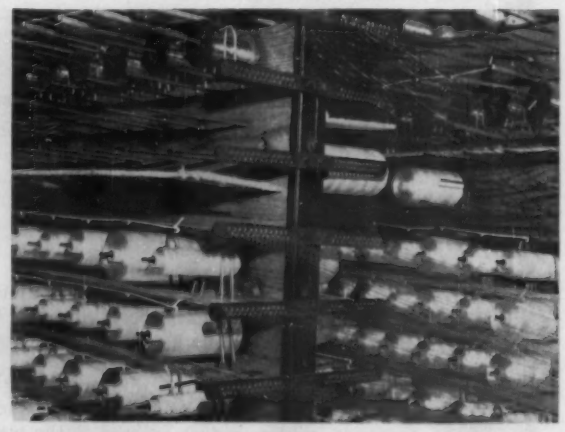
The knives on this machine are set to conform with the required yarn width. Yarn sizes range from ⅛ to 1/128 in. About 90% of yarns used today are ¼ in. wide. After cutting, these yarns are wound directly onto double-headed packages with a straight traverse wind.

From 8 to 16 oz. of metallic yarn is wound on each bobbin for most purposes, but small bobbins are supplied for embroidery and other special uses. Many bobbins are now made from plastic and are disposable.

Metallic yarns with Mylar are processed in a manner similar to butyrate yarns. A synthetic-rubber base is used as the laminating solution.



SLASHING is not recommended for metallic yarns, and mills have rigged up creels on slashers such as this one where the metallic yarns bypass the slasher and wind on the loom beam.



WEAVING of warp yarns is often done from creels arranged behind the loom. Stopping devices are not necessary, but lighter tensions are placed on the metallic yarn than on the rayon yarn.

FILLING YARNS here are 1/64-in. metallic yarns supported with 70-den. nylon to weave jacquard designs. Filling yarns are run through neutral-base oil to keep them from sloughing off.

HOSIERY for children is decorated with 1/64-in. metallic yarn. The metallic yarn is wound on 1¼-in. brass bobbins in a cone shape so the yarn runs off the bobbin better.

Metallized Mylar yarns use a different principle of manufacture. Rolls of Mylar, 40 ins. wide, are run through a vacuum chamber where the aluminum particles are vacuum-deposited on one side of the Mylar film.

The material is then run through a laminating machine where a second Mylar film is placed over the coating of aluminum. Where colors other than silver are required, a further laminating process is necessary to color the silver that shows through the transparent Mylar.

Gauge Is Film Thickness

The gauge of metallic yarns is based on the combined thickness of the films used to make the yarn. Aluminum foil is about 0.00045 in. thick and Mylar is about 0.0005 in. thick, but the thickness of the adhesive and vacuum-deposited aluminum is almost negligible.

Metallized Mylar is 100 gauge (about 0.001 in. thick) or 150 gauge (about 0.0015 in. thick). Butyrate yarns range from 220 gauge to 320 gauge, with 260-gauge used most.

Yarn numbers such as those used for other textile yarns are not used for metallic yarns, which are designated by the width and the gauge. Yields of metallic yarns run from 48,400 yds. per lb. for a 1/100-in. 100-gauge metallized Mylar to 2,600 yds. for a 1/8-in. 260-gauge butyrate yarn.

Silver and gold make up about 90% of metallic yarns, with silver the most popular shade at the moment. Other metallic effects such as copper and bronze are made. In addition to black and white, metallic-yarn colors are made in a wide range of blues, greens, reds, and other colors.

How Space-Dyed Yarns Are Made

Space-dyed or multicolored effects are obtained by printing the film before it is laminated to the foil. The printed side is laminated next to the foil. Up to five different colors spaced at regular intervals are used for these yarns.

Two-color effects are made by laminating each covering film with a different-colored adhesive. The color combinations are very varied, and a better effect is often obtained after the yarn has been twisted with a supporting thread.

Supporting threads are not essential to knit or weave most modern metallics; but most filling yarns in weaving are supported with Mylar, rayon, Fortisan, or Dacron. A supporting thread such as a boucle or a slub yarn is sometimes used to give additional novelty effects to the fabric.

Nylon is preshrunk before it is twisted with a metallic yarn, and 70-den. yarns are given 7-tpi. twist. This yarn gives added strength and prevents abrasion of the metallic.

Fortisan yarns seem to be gaining in popularity as supporting threads because they don't stretch and buckle the Mylar as nylon sometimes does. Dacron yarns are sometimes preferred on Mylar yarns when the fabric is dyed, because Dacron has properties similar to Mylar.

How Yarns Are Twisted

Twisting is usually done on hollow-spindle twisters. The metallic-yarn spool is placed on a creel below the spindle in a horizontal position.

The yarn is run off the side of the spool, and it turns the bobbin around. This principle is followed throughout most processing operations because the yarn is twisted if it is pulled over the end of the package.

Supporting yarns are wound on double-end bobbins, and these yarns are twisted around the metallic as the metallic is drawn up through the hollow spindle. Supporting yarns are twisted around butyrate with 5 to 6 tpi. and around Mylar yarns with 4 to 6 tpi.

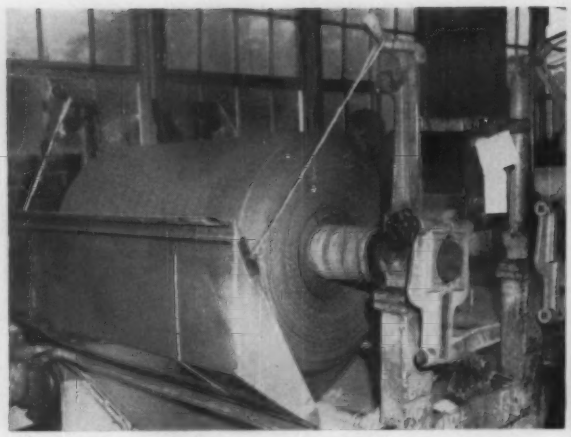
Two Threads Balance Twist

Crisscross twisting with two supporting threads is sometimes done to balance the twist. The two ends are twisted in opposite directions around the metallic. A double-deck twister is used, and the metallic is run through the two covering-yarn spindles, which rotate in opposite directions.

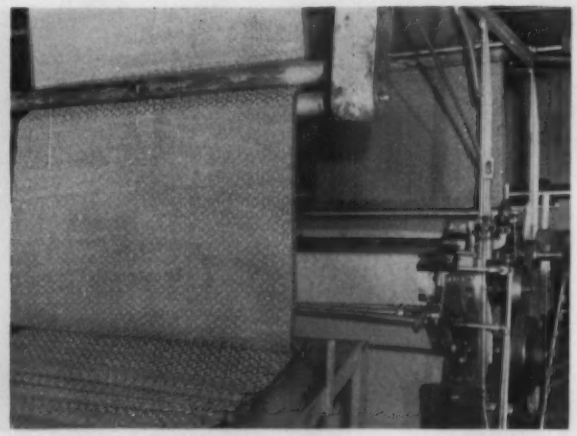
A similar method is used for covering rubber yarn, where the rubber is fed from the center spindle and the metallic is the outer covering yarn. This yarn was one of the early modern metallic yarns where it was, and still is, used extensively for hand-crocheted slipper tops.

A little neutral-base oil is sometimes added to these yarns at the twister to keep the yarn from sloughing off the pirn during quilling. When metallic yarns are quilled directly from the spool, a felt oiled pad on the quiller between the spool and the tension device applies the lubricant.

Where spools are quilled or warped in a vertical position, a washer is used under the spool. The pins are lightly greased to reduce drag on the spool. A free-running spool, however, causes the yarn to overrun when the yarn breaks or the spindle stops turning.



DYEING fabrics containing metallic yarns is done here on the jig at 200° F. About 12 ends are necessary to get the correct shade. Direct colors and aftertreated direct colors are most used.



BRUSHING AND SHEARING is the final operation before inspecting, and it has no harmful effects on the metallic yarn. Temperatures in dry finishing operations can be raised to 300° F.

Tension Devices Stop Spools

This problem is being overcome with tension devices that stop the spool when the yarn breaks. One such device has an arm that is supported by the yarn. If the yarn breaks or tension is released, the arm springs up and applies a brake on the flange of the bobbin.

Warping of metallic yarns is done from silk-system creels or magazine creels adapted to run spools. Stretching the yarn must be avoided; so spools must run freely and warping speeds must be kept low.

Running metallic yarns through slashers is not recommended, and some mills have fixed creels to their slashers. The creels are mounted between the last drying cylinder and the loom yarn beam or at the feed end of the slasher.

The metallic yarns are run over the regular yarns and do not pass through the slasher or the dryer. Several hundred metallic ends can be put on a warp along with regular slashed cotton or rayon yarns.

Fashion Demands Less Glitter

Fabrics made from metallic yarns are carefully designed to give the best effects without using a lot of metallic yarn, which adds a lot to the cost of the fabric. Fashion trends seem to indicate that too much glitter in a fabric is not wanted, and subdued effects are required where much of the metallic yarn floats at the back of the cloth.

Looms running metallic yarns in the warp often draw these yarns from a creel placed behind the loom. Regular tension devices are used, and the metallic threads are generally separated from the regular warp yarns.

Metallic filling yarns are usually supported; but when unsupported yarns are used, filling mixing is practiced to produce solid-color effects. Little tension is necessary on the shuttle eye pads, and opossum fur is recommended in the shuttle for fine metallic yarns.

Electric yarn stop motions are not affected by metallic yarns but some types of textile equipment are. For instance, automatic speed controls on tenter frames don't work with metallic yarns because the electricity used to determine the moisture content in the fabric is conducted through the yarn.

Static Troubles Are Not Met

Although Mylar is not an electrical conductor, the aluminum is; and the edge of the aluminum is exposed when the laminated sheets are slit. This conductivity is beneficial in some ways because no trouble is encountered from static electricity and yarns don't get wild if the conditions are dry.

Raschel knitting machines that run metallics other than metallized Mylar cannot use fabric stop motions where an electrical feeler is insulated from the earth rod by the fabric. Fabrics made on raschel machines are usually of the open-lace variety.

The metallic yarn is warped with the main yarn although spools are sometimes used at the back of the machine when the fabric design calls for fewer metallic threads. Metallic yarns have been successfully knitted on tricot machines, but this practice is not general.

Circular knitting machines consume considerable quantities of metallic yarns. Most of this yarn is knitted on a lay-in basis on latch-needle and spring-needle machines, and the back of the fabric is used as the effect side.

How Knitters Thread Yarn

Because of the high speed of these knitting machines, trouble is encountered with the yarn overrunning; but tension devices are being tried out to overcome the trouble. The metallic-yarn spools are hung in a horizontal position between the regular cone holders in some mills. The yarn is then run directly to the bottom yarn ring so the yarn sags when the machine stops.

Modern metallic yarns are now knitted even without supporting threads because they are pliable and they stretch. One knitter hangs the metallic-yarn spool directly underneath the supporting-yarn cone and runs the metallic yarn through the supporting-yarn cone so the supporting yarn is twisted around the metallic.

Metallic yarns are also knitted into children's hosiery, where they add glamour to the sock tops. Up to 16 metallic threads are wrapped around the needles of Fidelity rib-top machines to make designs with other yarns or designs with metallics alone.

Ingrain stretch nylon or mercerized cotton are the main yarns used for these socks, and the ¼-in. metallic is knitted from 1¼-in. brass bobbins. One mill built a special winder to wind these bobbins in a cone fashion so the yarn can easily unwind without causing trouble.

Metallics Now Resist Heat

The success of modern metallic yarns has been partly due to their improved resistance to heat, which allows

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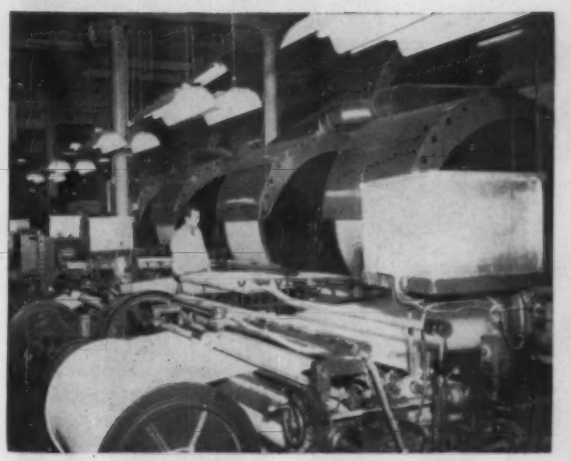
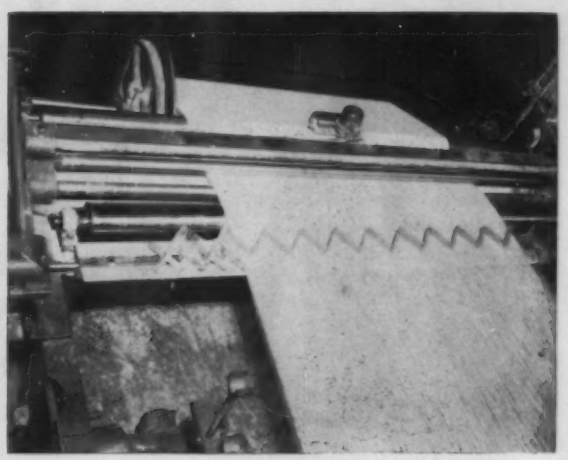


FOUR SLASHERS at Beaumont have afterdressers. The square metal box is the dressing reservoir.



DRESSING ROLL is mounted in front of the comb. The roll revolves in a trough filled with liquid dressing.

AFTERDRESSING at Slasher Aids Weaving at Beaumont

Afterdressing sized warps with a chemical compound at the Beaumont plant of Spartan Mills, Spartanburg, S. C., gives these results—

- **Less shedding**
- **Longer life of many loom parts**
- **Increased loom efficiency**
- **Reduced seconds**

THE BEAUMONT PLANT OF SPARTAN MILLS, Spartanburg, S. C., has increased loom efficiency 2% by applying a dressing to sized warps at slashers.

The wax-like dressing is applied with afterdressers made by Moretex Chemical Products, Inc., the supplier of the dressing. The system has been used for two years.

The afterdresser is mounted just back of the slasher delivery roll. It consists of a trough to hold the dressing, a roll over which the yarn passes, and a reservoir to hold a ready supply of the dressing.

The yarn does not pass through the trough. Liquid dressing is picked up by the roll and is imparted to the yarn as it passes over the roll. This dressing roll makes 1¼ turns per minute when the slasher is running at full speed. The roll is positively driven from the slasher drive through belts and chains. A geared speed reducer is used to get the required speed ratio.

The slashers at Beaumont Mills operate as 40 yds. per min. on a representative set of 4,000 ends of 14s cotton yarn. The slashers were not changed in any way when the afterdressers were installed. The size formula was not changed; and since the dressing is applied after the yarn passes through the size boxes and over the drying cylinder, the size pickup is not affected. The dressing adds 0.75% by weight to the warps.

The dressing does not present a problem in finishing the cloth. Desizing is done in the usual way, and the dressing applied by the afterfinisher responds similarly to the wax and softeners used in regular size formulas.

Since the warps have been dressed, there has been a slight decrease in fiber shedding, both at the slasher and in the weave room. However, the greatest benefit from the dressing is its lubricating qualities. Protective coatings of dressing are imparted to the drop wires, heddles, and reeds. This coating prevents these metal parts from rusting and reduces their abrasive action on the yarn.

In passing through the warp shed, the shuttle also receives a coating of the dressing and imparts some of it to the lay ends, boxes, and binders. This coating helps preserve these parts and makes them last longer.

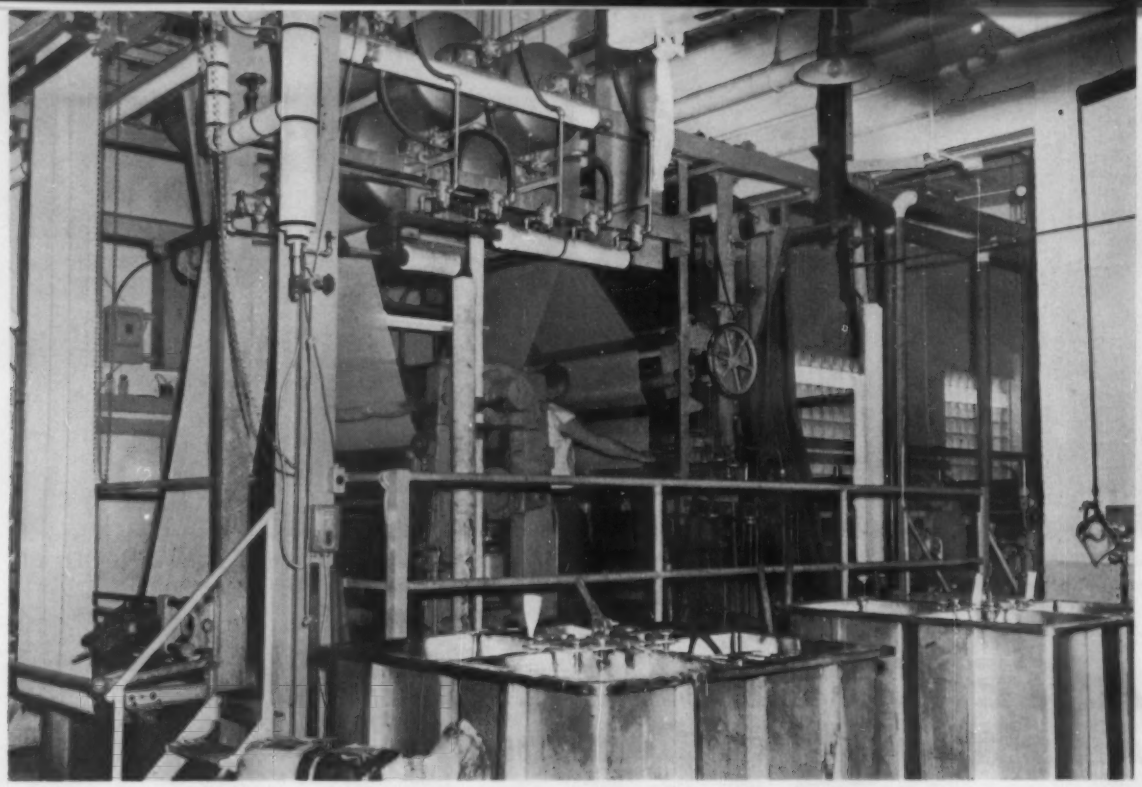
Formerly, the shuttles were dressed by hand every week with a solution of penetrating oil and shellac. Now it is not necessary for the loomfixers to use any dressing on them except when nicks and scars are repaired.

Dressing Makes Neps Pliable

When coarse yarns are spun from Low Middling cotton, there are some neps and slubs that cause trouble in weaving.

Hard neps and slubs not only cause the yarn into which they are spun to break, but they often whip into the shed and break other ends. The dressing softens neps and slubs and makes them more pliable; so they weave into the cloth without breaking the yarn or causing a fabric defect.

Other advantages of afterdressing at Beaumont are cleaner rooms and machinery, longer life for drop wires, heddles, reeds, shuttles, binders and boxes, and better-quality cloth.



STANDFAST RANGE installed at Apponaug includes a conventional pad (back of operator), preheating cans above, and the U-tube carrying molten metal. The compartmented tanks in the foreground are used for the working dye solution, Glauber's salt, cleaning solution, and dye for the next run. Pumps transfer the solution to the dyebath as needed.

Apponaug Co. Gets Good Results With MOLTEN-METAL Dyeing Machine

The Standfast molten-metal dyeing machine in operation at Apponaug Co., Apponaug, R. I., has proved to be well adapted to the plant's needs. Some of the desirable features of this method of dyeing include:

- **Unusually even work, side to side and end to end**
- **Very short clean-up time required between lots**
- **Economical operation**

A CONTINUOUS DYEING RANGE that is equally practical to operate on a 1,000-yd. lot or a long run of 50,000 yds. is doing a good job for Apponaug Co.

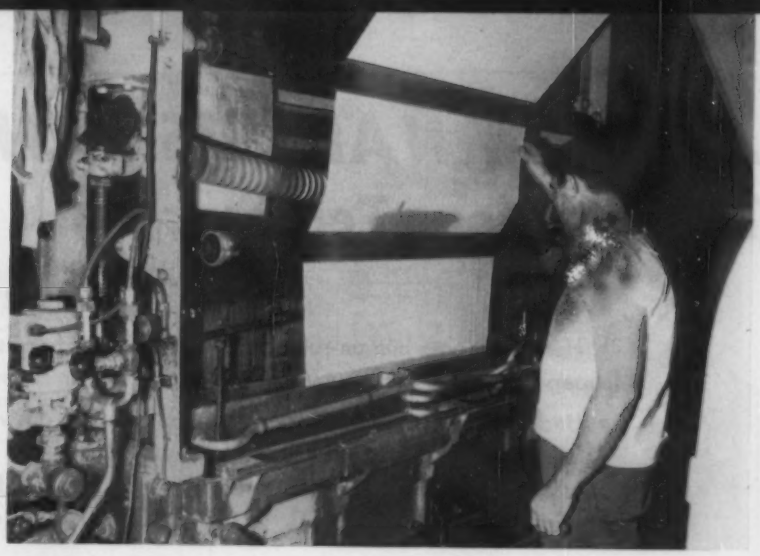
One of two such ranges in the United States, this English development uses a U-tube filled with a eutectic alloy to replace the conventional pad in forcing dyestuff into the fabric and removing excess liquor.

Actually there are two methods being used to produce vat dyeings on the Standfast machine. Standfast Dyers & Printers of Lancaster, England, refers to these methods as Systems 1 and 2.

In System 1, about 1 gal. of reduced vat color is floated on top of the molten metal on the entering end of the tube. The preheated fabric is passed through the leuco vat, enters the molten metal, which is kept at 95° C., travels down 51 ins., and returns a like distance up the other side of the U. A Glauber's salt bath floated on the delivery end of the U-tube gives the fabric a slight preliminary wash; and the goods then go into conventional rinsing, oxidizing, soaping and rinsing baths.

In System 2, vat color in pigment form is padded on the preheated goods, which are then led into the U-tube. In this case, a standard caustic-and-hydro reducing bath is floated on top of the metal and the pigmented color is reduced while passing through the tube. The usual oxidizing, soaping, and rinsing treatments follow.

Both methods are used at Apponaug, and the choice is usually de-



JACKETED U-TUBE is the heart of the machine. The fabric passes through reduced dye or reducing liquor and then down into the molten metal and out to the oxidizing and soaping range.

termined by the type of cloth and the required depth of shade.

For light fabrics and plain weaves such as 80-square, the reduced-vat method is used. With this system, the vat colors are made up in bulk tanks near the machine. This stock liquor is transferred to compartmented tanks that feed the U-tube of the dyeing machine through a pumping system.

The necessary hydro is added just before use. Automatic level-control equipment maintains a constant level of dye on top of the molten metal. The dye that is actually in use is kept circulating on top of the metal by a pump, and the temperature of the dye is kept at 75° C.

Apponaug can produce up to 100 yds. per min. by this method.

If the pigment-pad method is used, the preheated goods are run into a pad containing the pigment, which is kept at 50° C. Then they go into a reducing bath floated on the metal. The hydro content of this bath may run up to 8 oz. per gal.

To get better dye acceptance on the fabrics run in this way and to help produce heavier shades, the speed is cut down to about 50 yds. per min.

Apponaug has had considerable success in dyeing in this way a wide variety of fabrics running from 1 to 9 yds. per lb. The method is particularly good for corduroys because the molten metal does not crush down the pile as severely as a heavy pad, and yet it exerts even pressure over the uneven surface of this fabric.

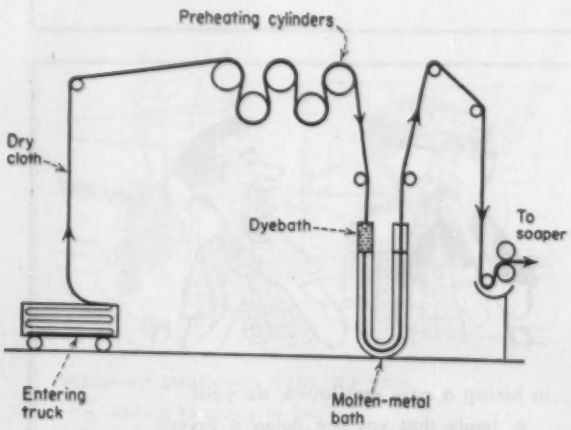
The plant has found that the amount of metal lost through entrainment in the cloth is of no economic importance. Occasionally the surface of the metal is skimmed to remove impurities that accumulate from continued dyeing operations.

Clean-up between runs is done by pumping the cleaning solution from the compartmented tank near the dyeing machine. These tanks have four 75-gal. compartments that carry the working solutions of the dyes, the cleaning solution, and partially prepared dye solutions for the next run.

Hydro is added to the cold working solution just before it is used so that there is little time for degradation of the dye. The dye is heated through a heat exchanger just before delivery to the dyebath.

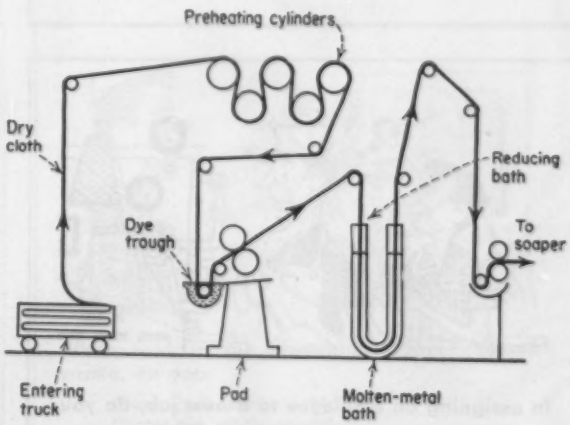
Switching from one color to another requires only 5 to 10 mins. because the areas involved are small and the cleaning solution is always ready to be pumped through the dyebath.

The system has proved economical and practical because of the attention given to automatic control wherever possible and the chemical-supply system that services the range.



SYSTEM NO. 1

REDUCED-DYE METHOD utilizes the U-tube only and is preferred for open weaves and light shades. The goods leave the U-tube through a Glauber's salt bath.



SYSTEM NO. 2

PIGMENT-PAD METHOD requires a separate pad to saturate the goods in unreduced dye, which is reduced in hydro bath floating on top of molten metal.

A SELF-ANALYSIS QUIZ
To Rate Your Temperament

• Here are some human-relations situations that frequently confront every supervisor. What are your reactions under similar circumstances?

• Under each question are four answers. The last answer given is the most nearly correct. If you can honestly say that the last answer given to a question applies to you, give yourself a 10. If one of the other answers applies, you get a great big 0. A score of 50 or more is above average.

By **WILMER C. WESTBROOK,** Assistant Editor, TEXTILE WORLD

When your immediate supervisor criticizes something you have done, do you:

a. Lose your temper?
b. Build an alibi?
c. Start an argument?
d. Discuss the matter frankly?

When an employee comes to you with a personal problem, do you:

a. Cut him short?
b. Put him off?
c. Tell him to settle his own problems?
d. Listen with genuine interest?

In assigning an employee to a new job, do you:

a. Let him find things out for himself?
b. Assume he needs no instructions?
c. Tell him to let someone know if he needs help?
d. Show details of the job and check back later?

In hiring a new employee, do you:

a. Imply that you are doing a favor?
b. Do all the talking?
c. Let him know who's boss?
d. Stress the fact that he's to work with you, not for you?

When something goes wrong on your job, do you:

a. Pass the buck?
b. Minimize the matter?
c. Make excuses?
d. Correct what's wrong and take precautions against a recurrence?

When costs get out of line, do you:

a. Ignore the problem?
b. Argue that the price of everything has increased?
c. Tell everybody to cut costs on everything?
d. Analyze all cost factors?

When off the job, do you:

a. Knock your company?
b. Discuss strictly company matters with outsiders?
c. Indulge in plant gossip and slander?
d. Set an example for your employees?

When quality is not up to par, do you:

a. Blame it on the preceding processes?
b. Claim it is caused by defective materials?
c. Assume that it will correct itself?
d. Immediately seek the cause?

When an employee quits, do you:

a. Refuse to speak to him?
b. Tell him you're glad to see him go?
c. Advise him not to come back?
d. Learn his reasons for quitting?

When told to do something about excessive waste, do you:

a. Claim it is unavoidable?
b. Doctor the waste records?
c. Lecture everyone in the department?
d. Itemize and check each type of waste?

COTTON-MILL WASTE — Down 5% in Most Mills

A survey covering 10-million spindles shows that waste losses in cotton mills are constantly decreasing because of improved machinery and better cotton. Total waste removed ranges from 10% in sheeting mills to 33% in combed-goods mills.

A breakdown of print-cloth waste shows that most of it is taken out in the opening, picking, and carding processes; but the pattern varies in many mills.

By E. W. BRINGLE and R. V. MIRALDI, National Cotton Council

WASTE REMOVED BY COTTON MILLS is now 4 to 5% less than in 1933. Print-cloth mills are producing 2% less waste and combed-goods mills 7 to 8% less.

These facts were brought out recently in an industry-wide study of cotton-mill waste by the Technical Committee of the National Cotton Council. Mills representing more than 10-million spindles were surveyed.

Other findings of the survey show that cotton-fiber properties had a steady decline in average grade index (or an increase in the quantity of lower grades produced) from 1928 to 1946.

From a paper presented at the 1957 Cotton Research Clinic.

In more-recent years, longer staple and finer and stronger cottons have been produced. Average maturity and length-uniformity ratios continue at a fairly constant level.

The net decline in mill waste has resulted from improved fiber properties, improved machinery, and increased waste-consciousness on the part of mill personnel.

The downward trend in the average grade of cotton during prewar years might create the impression that mill waste should be higher today than in the 1930's. This assumption, however, is not borne out by investigation.

The Council in a 1950 report on waste pointed out that the average waste factor (excluding bagging and ties) was 17.9% in 1930. By 1935, the factor had decreased to 16.2%. It was down to 14.7% in 1947 and 14.2% in 1948. Now it is 13%.

A comparison of waste losses for 21 typical fabrics is shown in Table 1.

Reports from print-cloth mills presents a more-detailed waste picture. Average production data and their range are given in Table 2. Almost every mill surveyed processes 1 1/16-in. Strict Low Middling cotton. Three mills blend Middling with Strict Low, and three others blend Middling Color with Strict Low Leaf.

Mills Process Stock Differently

Print-cloth mills are reasonably uniform in selecting cotton, but their methods of processing stock vary considerably. There was a variation of

Table 3—Comparison of Waste Removed by 17 Print-Cloth Mills (Excluding Bagging and Ties)

Mill	Opener motes	Picker motes	Dust house and filter	Card motes and fly	Flat strips	Cylinder and doffer strips	Card-room sweeps	Spinning-room sweeps	Weave-room sweeps	Card-room clearer waste	Spinning-room clearer waste
FM	0.86%	1.18%	0.17%	1.64%	3.02%	1.25%	0.46%	0.84%	0.89%	0.12%	0.10%
FL	0.90	0.98	0.21	1.47	3.24	1.04	0.40	0.90	0.91	0.05	0.11
EI		1.45	0.24	1.56	2.72	1.04	0.38	0.85	1.72	0.09	0.11
FH	1.94		0.38	1.86	3.94	0.71	0.42	0.98	1.00	0.06	0.10
HM	1.95		0.33	1.59	4.02		0.49	1.13	1.75		0.27
HL	1.88		0.40	1.63	3.97		0.51	0.75	1.18		0.14
HK	1.79		0.32	2.44	4.37		0.52	1.00	1.20		0.13
HJ	1.70		0.16	2.35	4.84		0.44	0.96	1.03		0.13
HI	2.18		0.45	1.83	5.30		0.60	0.72	1.22		0.09
EM	1.96		0.25	1.99	3.65	1.36	0.24	0.96	1.16		0.10
FV	1.92		0.45	1.64	3.15	1.30	0.36	0.62	1.17	0.22	
FX	2.27		0.57	1.48	3.32	1.15	0.54	0.73	0.95	0.25	
GT	1.94		0.51	1.45	3.07	0.99	0.54	1.62	1.05		0.10
HY		1.52	0.68	1.82	2.80	1.31	0.51	0.79	0.64	0.11	0.04
KO	0.40	0.75	0.14	1.62	3.50	0.50	0.41	0.50	0.75	0.07	0.10
FA		2.00	0.25	0.95	2.75	0.75	0.32	0.95	0.50	0.14	0.05
FD		1.85	0.20	1.15	2.75	0.85	0.50	1.00	1.05	0.08	0.10

WASTE PATTERN is different from mill to mill. Most of the waste is taken out at the opening, picking, and carding processes; but two

Table 1—Waste Losses for 21 Fabrics (Excluding Bagging and Ties)

Fabric	1933	1956	Difference	Bales Saved
Print cloth	14.50%	12.47%	2.03%	25,500
Class A sheeting	15.00	10.65	4.35	7,200
Class B sheeting	15.00	9.46	5.54	12,000
Class C sheeting	15.00	9.42	5.58	13,200
Diaper cloth	14.50	9.69	4.81	1,900
Soft-filled sheeting	15.00	10.35	4.65	13,700
Drill	15.00	11.13	3.87	14,200
Poplin and gabardine	14.50	10.43	4.07	11,200
Tobacco and cheesecloth	14.50	10.38	4.12	8,800
Carded broadcloth	14.50	10.93	3.57	9,900
Denim	16.50	10.44	6.06	44,300
Gingham, chambray and seersucker	19.00	11.65	7.35	5,000
Terry toweling	14.50	11.90	2.60	14,700
Huck toweling	15.00	11.95	3.05	1,700
Flannel	17.50	10.89	6.61	22,800
Combed lawn	33.00	24.05	8.95	14,300
Combed broadcloth	33.00	25.67	7.33	22,500
Corduroy	17.00	10.78	6.22	1,600
Twills	15.00	10.86	4.14	40,200
Carded sateens	15.00	11.18	3.82	4,900
Combed sateens	33.00	25.54	7.46	26,400
Total bales saved				316,000

Table 2—Production Data for Print Cloth

	High	Low	Average
Picker lap (oz. per yd.)	15.5	12.8	14.5
Picker production (lbs. per hr.)	471.0	238.0	337.0
Card sliver (grains per yd.)	58.0	48.0	52.6
Card production (lbs. per hr.)	11.0	7.0	9.3
Grade	....	....	SLM
Staple (ins.)	....	....	1 1/16
Micronaire fineness	4.5	3.6	4.25

PICKER AND CARD PRODUCTION varies widely in print-cloth mills. Cotton used is fairly uniform in grade and staple.

WASTE LOSSES have gone down steadily since 1933. Biggest gains were in combed- and high-grade carded-goods mills. Smallest savings were shown by print-cloth mills.

2.7 oz. per yd. between the lightest and heaviest picker laps. Picker-production rate varied as much as 137 lbs. per hr. Card sliver differed by 10 grains from the heaviest to the lightest; and cards were operated at rates ranging from 7 to 10 lbs. per hr.

A breakdown of print-cloth waste in Table 3 shows that waste figures vary considerably from mill to mill. In general, there is an upward trend in total opening, picking, and carding waste.

But there are two exceptions that stand out. Mill HM, which ranks third highest in total waste, has the least waste through carding and Mill HL presents a similar picture.

Middling Cotton Cuts Waste

Of the four mills with the lowest waste losses, three use a percentage of Middling in their blends. These mills are FA, FD, and KO.

The two lowest mills, EI and FA, have the same total waste percentage, but the waste is removed at different points in the processing lines.

Through carding, total waste of the two mills is very nearly the same. Mill EI, running 100% Strict Low cotton, takes out more waste at the cards. Mill FA, which blends 60% Middling and 40% Strict Low grades, does more of its cleaning in the opening room than eight of the other mills.

Carding Speeds Vary Among Mills

Mill FA cards at 10.41 lbs. per hr., compared with 7.6 lbs. per hr. for Mill EI. This comparison might appear to indicate that slow carding takes out more waste, but all the other mills follow a random pattern at carding. Both the lowest and the highest mills in terms of card waste run their cards at 10.5 lbs. per hr.

Mill HJ, which ranks third highest in percent of card strips and second highest in percent of fly, cards at 11 lbs. per hr. Mills GT and HL, among the lowest in percent of card waste, also card at 11 lbs. per hr.

Little Waste Removed by Openers

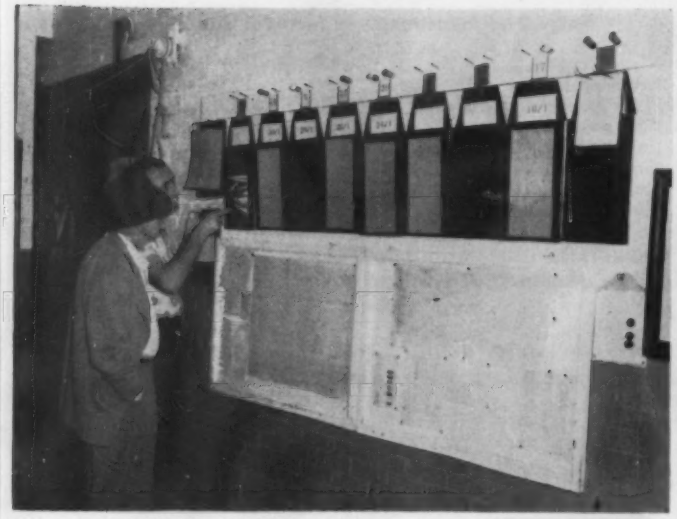
Mills HJ and EM take out very little waste in the opening room but rank fourth and fifth highest in total waste removed. Most of their waste is removed at the cards.

Mill HM is below average in cardroom waste, but spinning and weaving waste bring the total waste percent up to third highest.

Waste classifications between low and high mills vary as follows: motes 10.8%, card strips 11%, card fly 22%, spinning-room sweeps 21.1%, clearer waste 30.8%, weave-room sweeps 30.84%, thread 32.4%, dust-house waste 45.9%, rags 49.3%, and cardroom sweeps 73.9%.

Soft thread	Slasher thread	Oily thread	Clean rags	Oily rags	Total
1.23%	0.09%		0.13%	0.09%	12.16%
1.40	0.14		0.06	.04	11.92
0.07	0.10		0.02		10.35
0.47		0.51	0.13	0.05	12.55
		2.01	0.34	0.12	14.00
		1.30	0.20	0.14	12.10
		2.10	0.27	0.10	14.24
		1.71	0.24	0.15	13.71
		1.42	0.26	0.18	14.25
0.74	0.58		0.19	0.04	13.25
0.36	0.50		0.12	0.07	11.93
0.91	0.41		0.17	0.06	12.81
1.17	0.43		0.20		13.07
1.16	0.65				12.25
1.19	0.55		0.53	0.53	11.64
0.65	0.35	0.14	0.35	0.09	10.35
0.99	0.35		0.39	0.13	11.40

mills that rank high in total waste have the lowest waste figures through carding.



CONTROL BOARD is the heart of the spinning-room operation. Processing data for each frame and yarn number can be seen at a glance.

WINDER CONES are weighed and inspected by one man who puts a ticket in each package that identifies the operator, machine, and shift.

Spinning KINKS At Parkdale

Operating methods and Kinks that are paying off in better-running work at Parkdale Mills, Inc., Gastonia, N. C., include—

- **Central control board for spinning**
- **Card-controlled doffing**
- **Method for fixing winder responsibilty**
- **Special tools for spinning frames**
- **Heat and condensation controls**

PARKDALE MILLS, INC., Gastonia, N. C., has developed a number of ingenious operating techniques and mechanical gadgets that save time and money in the spinning room. A few of them are described here.

Control Is Centralized

The heart of the spinning operation centers around an elaborate control board in the spinning laboratory. This board shows at a glance pertinent processing and operating data and supply inventories that concern spinning.

Any employee can look at the board at any time and see how his job is running. This practice saves the supervisory staff a lot of hunting through files and making mathematical calculations when a question arises.

Processing data for each frame include hank roving, draft gear, draft constant, twist gear, twist constant, turns per inch, twist multiplier, motor sheave, cylinder sheave, cylinder speed, front-roll speed, hanks and pounds per hour and per 8 hrs. at 100% efficiency, traveler number, motor speed, and square root of the yarn number.

Ends-Down Graph Is Used

Other operating data show ends down for each frame from week to week and for the previous year, plotted in graph form. Notations on this chart indicate inside and outside temperatures and whether or not the air conditioning was operating for the period concerned. Cotton characteristics also are shown.

Supply data show the inventory of twist and draft gears and motor sheaves at all times. Incidentally, the various-size motor sheaves are painted different colors so that a sheave can be identified instantly while it is running.

Yarn boards for each yarn number in process are made weekly and hung

TUCKS IN CLEARER CLOTH increased picking interval from 8 to18 hrs. This idea, which recently won the TEXTILE WORLD monthly Kink prize for Overseer A. J. Redmond, was described on page 149 of the Jan., '57, issue.

SPINNING TAPES are precut under the same tension to assure uniformity and reduce waste. Equipment was built by the mill.

over the control board, where they can be easily compared with standards. This arrangement makes it easy for the overseer or superintendent to quickly determine how yarn appearance and quality are holding up.

Bobbin tips painted various colors are hung on pegs over each yarn board. The color corresponds to the color of the bobbin on which that particular yarn is being spun. If a yarn number is in doubt, all the operator has to do is compare his bobbin with the bobbin tip hanging over the yarn board. This system has practically eliminated mixed numbers.

Controlled Doffing Equalizes Work

One of the most profitable ideas developed by the supervisory force is a system of controlled doffing. No spinning frame can be doffed except on written orders from the spinning-room office.

The spinning-office clerk on the first shift sets up control cards for each shift that show exactly when each frame is to be doffed, its running time, and the yarn number.

Coarse numbers are balanced against fine numbers so that the work assignment for each doffer is equalized. This equalization of work has eliminated short doffs and unfair practices. Spindle efficiency has greatly increased since the system was installed.

Winder Responsibility Is Fixed

Another idea that has paid off at Parkdale is the fixing of responsibility for bad work in the winding department. The system calls for one man to remove all cones and weigh and inspect them.

The results of his findings are posted on a bulletin board under each operator's name. Then, a ticket showing the operator's number, the machine number, and the yarn number is stuffed inside each cone. If bad work happens to get through to the customer, it is easy to pinpoint the cause of the trouble.

Mechanical Gadgets Pay Off

Parkdale employees are encouraged to improvise mechanical improvements as well as operating methods.

For example, A. J. Redmond, overseer of spinning, has designed a bobbin-painting machine, an improved clearer, a tool to keep ends from breaking when frames are stopped, an attachment to make bearing down on the rail easier, and a method of precutting tapes.

Roy Dial, second-shift overseer, constructed an improved bunch builder that reduces tangled ends and permits frames to run 45 mins. longer.

Other improvements include an inexpensive method of heating the spinning room and a way to stop condensation on the conditioning-room ceiling.

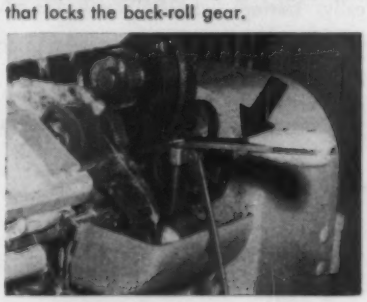
Steam pipes, inserted in the air-conditioning ducts, are turned on automatically when the temperature drops below the comfort level.

Condensation in the conditioning room was stopped by building a false ceiling and heating it with infrared bulbs.

Some of these ideas are shown in the accompanying photographs.

BEARING DOWN on the rail is made easy for lightweight operators with this pedal extension (arrow) that increases leverage.

BROKEN ENDS caused by changing gears are kept to a minimum by this tool (arrow) that locks the back-roll gear.



Maintain ELECTRICAL SYSTEMS To Keep Machines Running

• With machines becoming more automatic, a plant's power supply must be continuous. Here is a list of inspections and preventive-maintenance techniques to reduce the number of failures in your distribution system.

IN TODAY'S HIGHLY MOTORIZED PLANTS, a power outage on one of the least significant feeders often disrupts manufacture as badly as a total plant power outage.

Many panic maintenance repairs can be made after an outage occurs, but inspections and preventive-maintenance techniques will reduce failures of a distribution system to a minimum.

Many groups of components require only occasional preventive maintenance, and consequently they receive no attention at all. Power-factor-improvement capacitors are usually in some out-of-the-way place and are forgotten; however, a few simple periodic inspections of the capacitor practically eliminate capacitor outages.

Capacitors usually have an internal discharge resistor to reduce the voltage to 50 v. within 5 mins. after the capacitor is de-energized. However, each terminal and the capacitor must be grounded with a grounding stick whenever work is done on or near the capacitor. This ground connection should be maintained all during inspection, maintenance, and cleaning the capacitor.

Don't Overload Capacitors

A good capacitor will operate continuously at 10% overvoltage; however, voltage higher than 10% will cause overheating, shorten the life of the capacitor, and blow fuses. This condition is usually corrected by switching the capacitors out of the circuit, either by hand or automatically, during light-load high-voltage periods.

Occasional blown fuses are also caused by (1) a short inside the capacitor, (2) gradual weakening of the fuses from sustained overloads, (3) heat or corrosion, or (4) high-voltage transient switching.

Excessive temperature is another cause of capacitor trouble; 55° C. is the upper limit for most capacitors, and higher temperature causes deterioration of the dielectric and increases the losses well above the normal 0.333%. Continued overheating usually results in internal breakdown.

Excessive operating temperature is caused two ways (1) excessive voltage or (2) poor ventilation. To correct excessive voltage, switch the capacitor out of the circuit.

Prevent Poor Ventilation

If poor ventilation is indicated: (1) move the capacitors to a place on the line with lower ambient temperature; (2) provide forced ventilation; or (3) in multiple capacitor installations, increase the spacing between the capacitors and install baffles to prevent heated air from conveying to adjacent capacitors.

To insure the best efficiency, long life, and stable operation of your capacitors, establish the following preventive-maintenance program:

1. Check for blown fuses every six months.

2. Clean the capacitor tank and bushing every six months or more frequently if the capacitor is in an extremely dirty location.

3. Check the operating temperature by fastening a thermometer to the side of the can. A thin layer of dirt greatly decreases the ability of the can to dissipate heat. Extremely dirty bushings cause leakage and flashover.

When newly installed capacitors are energized initially, check the voltage. Allow 6 to 8 hrs. for the capacitors to reach their operating temperature, and choose a low-load period. Make further voltage checks when there are any major load decreases on the system and when a power transformer tap is changed.

High-voltage bushings should be given attention when you set up a maintenance schedule. As with capacitors, bushings should be de-energized before they are inspected, cleaned, or tested; and a ground should be attached to remove electrostatic charges. A foolproof safety tag or lock system must be set up to prevent feedbacks on the circuit where work is being done.

Periodic cleaning of the porcelain is the most important part of bushing maintenance. Cleaning is especially necessary on indoor installations because they usually have lower flashover value and they aren't washed by rain. The frequency of cleaning depends on local conditions; usually cleaning every six months is enough.

Repair Chipped Petticoats

Dirt deposits may cause flashovers under humid conditions. The deposits should be removed with a cloth and an ammonia-and-water solution. To remove heavy accumulations of dirt and grease, a porcelain cleaning powder such as Lockbrite is necessary.

After a bushing has been cleaned thoroughly, it should be inspected for chipped petticoats, fractured porcelain, leaking gaskets, and the condition of the metal parts.

Chipped places on a porcelain petticoat should be hand-honed smooth. Then paint it with two or three coats of a sealer such as G.E. Glyptol No. 1210. The sealer gives the cracked surface a glossy finish and helps prevent the accumulation of dirt.

Fractured porcelains must be replaced. Fracturing is usually caused by a rigid bus connection without a flexible connection to allow normal thermal expansion and contraction or by uneven tightening of the clamping-ring bolts.

If the surface of the cement is crumbled or chipped, refinish it with patching plaster and paint it with a good sealer.

Clean, prime, and repaint corroded metal parts. Check the oil level of oil-filled bushings occasionally, and

Based on a paper presented by H. E. Heddesheimer, General Electric Co., at the recent Eighth National Plant Engineering and Maintenance Show and Conference in Cleveland

test a sample of the oil for its dielectric strength.

Tests can be made to determine the dielectric condition of a bushing; however, this testing is usually done only by utility companies and on large, important installations.

Inspect Cables for Overloads

In preventive-maintenance procedures for cables in a distribution system, the first step is to visually inspect all your circuits for overloads, poor thermal conditions, mechanical damage, and inherent danger spots.

A check for overload conditions is readily made with a hook-on ammeter. This method is a fast, accurate one and eliminates the need for disturbing the connections or de-energizing the feeder.

The two most common causes of insulation failure are moisture and excessive heating.

Excessive heating caused by overloads or external heat results in increased dielectric losses; and because the insulation dries, excessive heating eventually produces cracks that lead to failure.

If a cable is exposed to excessive temperature for a long time, the insulation becomes brittle. This cable should not be disturbed until replacement cable is on hand and a shutdown can be coordinated with production. If the cable is disturbed, it will probably crumble and cause an immediate failure.

Schedule Megohmmeter Readings

After all corrections have been made to a distribution system, establish a yearly schedule for d.c. high-potential test or megohmmeter readings. Since readings have to be taken up to 10 mins., an electronic or motor-driven megohmmeter is mandatory.

For best results from megohm readings, careful records should be kept of connections used, temperature, the megohmmeter used, date of readings, who conducted the test, and any other pertinent information that is necessary to duplicate subsequent tests.

Record your readings after 15 and 30 secs. and 1, 3, 5, and 10 mins., or until there is no increase in readings; but do not run the test over 10 mins. because as the temperature increases, the megohm value of the insulation decreases greatly.

Even though individual megohm readings are well above the minimum, a consistent downward trend is an indication of impending insulation failure.

Transformers are inherently trouble-free equipment, but limited scheduled maintenance is required.

The load, voltage, temperature, and coolant level should be checked frequently and recorded. Once a month is enough for this inspection under normal conditions. But if a transformer is being operated at full load or overload in an emergency, the equipment should be observed carefully once every hour.

In addition to checking the load, voltage, etc. on liquid-cooled transformers, make a yearly check on the coolant conditions and ground connections. Look for condensation under the cover, and make a general check for bolt and connection tightness and leaks.

If the unit is water-cooled, check for scale. If scale is allowed to build up, the transformer will operate at higher than normal temperature and consequently its life will be shortened.

Keep Transformers Dry

Survey your dry-type distribution transformers to be certain they aren't being wet by leaking steam or water lines or by open windows. They should be at least 1 ft. away from walls to insure free circulation of air around and through them.

Once a year remove your dry-type transformers from the circuit and inspect them internally for dust and dirt accumulations, loose connections, corrosion, and discoloration from overheating.

Clean the windings with a vacuum hose; however, dry compressed air not over 25 psi. may be used. If windings are wiped, use a dry cloth. Don't use a solvent because it might deteriorate the insulation.

If dry-type transformers are de-energized for a long period, inspect them to be sure that condensation has not accumulated on the windings.

This preventive-maintenance procedure should also be used on all spare transformers in stock.

Test Protective Relays

All of the several components of a power circuit are important, but the most important single component in a maintenance program is protective relays.

A thorough yearly inspection and test is usually enough unless excessive dirt is present or the application requires frequent operation of the relay. The relay should be generally inspected for corrosion, missing covers, broken glass, and accumulations of dust and dirt inside the housing.

Actuate the relay manually to see that all parts move freely and that each part performs its function such as tripping a circuit breaker or energizing an alarm.

Clean the silver contacts if they are corroded. Never use files or knives to clean the contacts because scratches will be left to increase arcing and deteriorate the contacts. Abrasive cloth leaves nonconducting particles that prevent the contacts from closing.

Polish Contacts With Strip Tool

To clean the contacts, use a silver-burnishing tool. This tool is a flexible strip of steel with the surface etched rough. The polishing action is very delicate and removes corrosion without leaving detrimental scratches, and points of contact are cleaned that cannot be cleaned with a rigid tool.

A relay requires no lubrication; and if any of the movements are sluggish, there is usually a cracked jewel bearing. Replace defective jewels and put in a new steel pivot. Then put one small drop of jeweler's clock oil on the new jewel and pivot. Only the amount of oil that will cling to the point of a fine needle should be used.

Humanics — **A TW Brief**

You Don't Learn a Thing When You're Talking

When you're handling any kind of employee grievance, complaint, or argument, it pays to be a good listener. Ask questions, listen attentively, and get the facts before stating an opinion.

Also, be observant. You can learn a lot from facial expression, tone of voice, and hand movements that is not stated in words.

SANTEE RIVER WOOL COMBING now produces 20,000 lbs. of wool tops daily that are shipped to worsted spinners throughout the South.

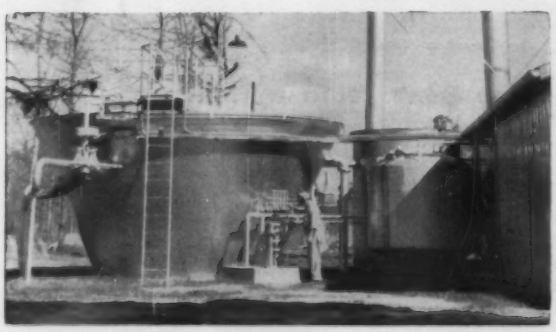
WOOL COMBING at Santee River Reaches High Production

South Carolina's latest wool-combing plant started production slowly and gradually increased production to 120,000 lbs. of tops weekly. Some of the outstanding features of the new plant that help make sure the tops are of the highest quality are—

- **Water-treating systems**
- **Scales between each gilling operation**
- **Quality-control laboratory**

WHEN SANTEE RIVER WOOL COMBING, a division of Branch River Wool Combing Co., Inc., started production in a new plant at Jamestown, S. C., two years ago, a policy was adopted to start production slowly and gradually build it up. The policy is now paying off in 120,000 lbs. of high-grade tops weekly for worsted spinning.

Local labor has been successfully trained to the special techniques required for wool combing by technicians from the mill's parent company in France and Woonsocket, R. I. Troubles with water supply have been overcome, and the mill gets an excellent supply of pure water from the Santee River.



WATER TREATMENT is given to river water used for scouring to make sure no minerals or solid matter remain to cause trouble in dyeing.

Wells were sunk, but well water was found to contain too much mineral matter for the successful processing of high-quality tops; so water was shipped by tanker from Lake Moultrie, 20 mi. away. A pipeline was eventually built to the Santee River 2 mi. away.

Water Is Treated

Water is pumped from the river by two 250-gals.-per-min. pumps and is treated by the Permutit system to get rid of all solids and matter that might cause difficulties in dyeing processes. The water is led to a large cone-shaped coagulating tank, where the sediment collects in the bottom and is drawn off at various levels. After filtering, the water is chemically treated and stored in a 100,000-gal. tank.

This system processes 100 gals. of water per minute, which is regularly checked for pH. Hardness and dissolved solids are checked three times daily.

Wool from Australia, South Africa, and South America is shipped by rail from Charleston, S. C. Most domestic wool used comes by truck from Texas.

Up to 3½-million lbs. of baled wool are stored in the warehouse next to the sorting room. A baling press is used to compress off-sorts for easy storage.

The sorting room is over large blending bins that

WOOL SORTING is done on benches that are moved near trap doors over a bin. Sorted wool is checked by the supervisor before it drops in the bin.

CARDING is done on specially built cards that have covers to keep the lint down. Card sliver falls on the conveyors that move it to the balling heads.

hold up to 100,000 lbs. of sorted wool each. Bales are broken open at the sorting tables, which are moved over the bin to be filled. Each fleece is removed, the string is untied, and the fleece is laid on the sorting table.

How Wool Is Sorted

Off-grade wool, stained wool, and tags are placed in baskets near the sorting table. Correct-grade wool is laid on the floor near one of four trap doors over the bin. A supervisor checks this wool for correct sorting before it moves through the trap door to the bin below.

The stock is sandwich-blended horizontally in the bin. A fork truck removes a vertical sandwich of the stock and carries it to the scouring train.

There are two lines of machines throughout the plant so that two types of wool can be processed at the same time. Two five-bowl Hunter scouring trains are arranged side by side.

Wool from bins and from baled stock is blended in a hopper at the end of each line, and the wool is taken along a lattice apron to an opener that feeds wool to the first bowl. Warm, soapy water is used for scouring; and the number of scouring and rinsing bowls are set up according to the type of wool processed. The effluent from the bowls is led to lagoon settling tanks and clean water goes back into the river.

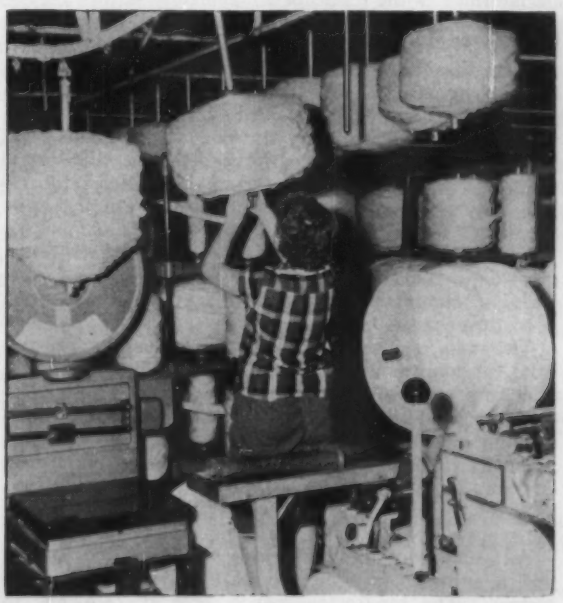
After it is dried, the stock is taken through a pipe to the card room, where it is dropped into an aluminum truck. Wool is fed to the card hoppers from the truck.

Special Cards Keep Lint Low

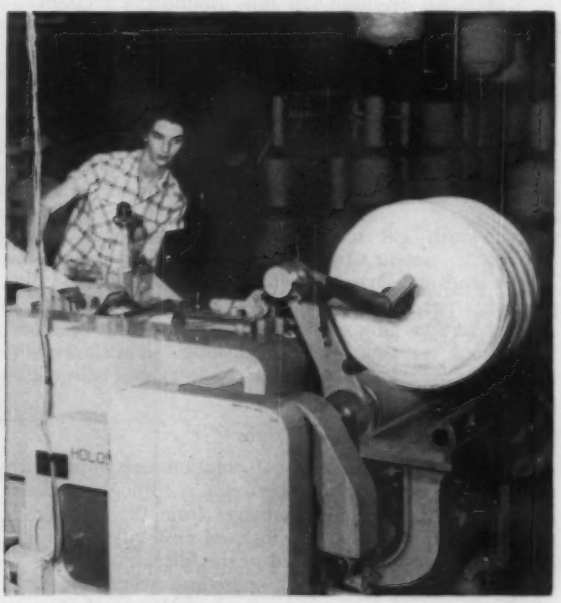
The cards are laid out in two lines with the hoppers facing the walls of the card room. The cards are specially built by the Prouvost Works in France to remove vegetable matter and other trash, and they are equipped with covers that keep lint to a minimum. Lights recessed in the ceiling and relative humidity kept to 75% also help keep lint under control.

Stock containing trash removed during carding is treated in a trash-removing machine, and the wool is recovered and returned to the scouring train. This work is done in a room separate from the card room.

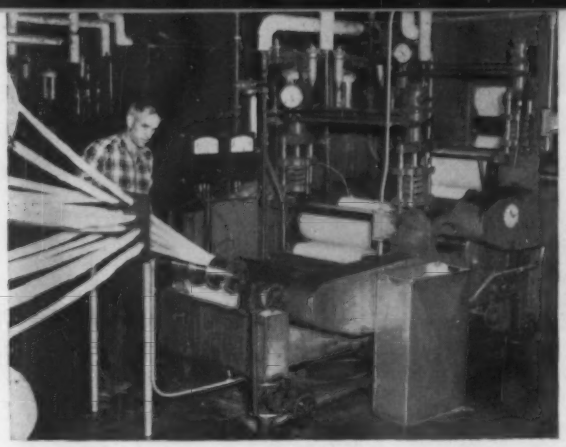
Sliver from each card falls on a conveyor that runs along the end of each line of cards. A balling head at the end of each conveyor drafts the slivers and puts them in a ball. An emulsion is added at the balling head to



CONVEYOR SYSTEM to the rectilinear combs is loaded at the third gilling operation. Scales are placed between each operation, and all balls are weighed.



SLIVER from the combs is passed through a gill reducer with Autoleveller equipment. From here, the sliver goes through more gilling operations.



BACKWASHING is done on 16 ends of sliver from the creel. After rinsing, the sliver passes around 12 dry cans and then is oiled lightly.

DARKROOM in the quality-control laboratory is used to check top for nibs and trash. The projector throws the fiber image on the screen for measuring.

give better drafting. A bell signals the correct length of sliver in the ball, and each ball is weighed as it leaves the balling head. Any deviation from standard calls for a change in draft. Draft is also changed when individual cards are stripped or ground. Stripping is done by hand, and grinding is done at frequent intervals.

Sliver goes through three gilling operations. Two ends are fed to each head at the first operation, and six ends are put up at the final gill reducer.

Scales Are Between Operations

Weighing scales are placed between each operation, and every ball is weighed after each gilling. Sliver that is not up to standard is returned to the previous operation for reprocessing.

All gill boxes and combs are fitted with electric stop motions on each head. Predetermined stop counters are also fitted.

The Sant' Andrea combs are laid out in three lines, and the Prouvost-built circular combs are laid out in two lines. An overhead rail runs around the rectilinear-comb section to deliver the sliver to the comb creels. The spindles on the track move continuously, and balls of sliver are put on empty spindles by the gill-box operators as they pass the scales at the final gilling operation.

The remaining trash in the wool is removed in this operation, and the vegetable matter in the doffer waste is less than 1%. Noil is removed according to the type of wool processed, and the combed sliver is fed to 16-in. cans.

Holdsworth gill reducers equipped with the Raper Autoleveller system next process the sliver from the cans. Twelve ends of sliver are fed to each reducer; and the product is put up in a ball, which is then weighed.

After further gilling operations, the balls are weighed and placed on racks for backwashing. This operation is done on Taylor-Wordsworth backwashers with automatic controls.

Backwasher Has 12-Can Dryer

After being washed in a soap solution and rinsed with warm water, the sheet of fibers is run through a 12-can dryer. As the sliver sheet emerges from the dryer, it is split into four sections and processed on a gill box, where a small amount of oil is added to the fibers.

Pin drafting is the final operation, where six balls of sliver are fed to each head of a Warner & Swasey pin drafter. The final product is a ball of 140-grains-per-yard sliver that weighs 16½ lbs. After a final weighing, the balls are placed in aluminum trucks that hold 32 balls. One truckload constitutes the contents of one bale. Each ball is packaged in polyethylene bags to retain the correct moisture and to keep it clean.

Before balls are compressed into a bale, a sample is taken from every eighth ball and passed to a small laboratory where the sample is tested for oil and moisture content.

The main quality-control laboratory is also in operation 24 hrs. each day. Equipment in this laboratory includes testers for fiber length, fiber diameter, and evenness and a darkroom for checking nibs and vegetable matter.

A sample from each line of machines is constantly tested in the darkroom. Wool fibers from 5 yds. of top are first spread out on a white velvet cloth, which has a light shining through it. Pieces of vegetable matter are removed, counted, and recorded on a form.

The same amount of wool is then spread over a blackboard, and the nibs are counted. Machinery is adjusted if these tests show above-standard results. Customers are informed of the results of all laboratory tests.

How Fiber Diameter Is Checked

Fiber diameter is checked on a projector. Wool from the top is cut into $\frac{1}{64}$-in. pieces on a microtome and placed in a slide. The enlarged image of the fibers is projected on a screen, and a wedge card is laid over the fibers to discover their average diameter. The average fiber diameter is calculated from 100 different fibers. The sorting-room foreman is kept informed of the average diameters.

Fiber lengths are checked on a Schlumberger tester every day. Finished top is placed under a feed roll, and pulls are automatically made and deposited on a series of toothed combs.

Two rolls remove the different fiber lengths, starting from the longest fibers, as the combs are dropped. The fibers are removed by a brush and weighed to give a true picture of the fiber diagram, which is used to adjust machines.

A special room is set aside for faller-bar maintenance. An extra set of faller bars is kept for each machine, and each set is cleaned and checked every day. Broken pins are replaced, and all pins are straightened.

All sections of the plant, except the raw-wool storage and scouring room, are air conditioned by the Bahnson system. The top-storage area is kept at 73% r.h. to insure that finished top is at the correct condition when it leaves the plant.

NYLON LOOPS, as shuttle friction material, were discussed at length by STA members.

Carolina Mill Men Discuss SLASHING and WEAVING

At its spring meeting at North Carolina State College, Raleigh, N. C., the Eastern Carolina Div., Southern Textile Association, discussed a number of timely subjects. Among other things, mills related their experiences with—

- **Rubber-covered squeeze rolls**
- **Afterwaxing**
- **Nylon shuttle loops**
- **Plastic shuttles**

THE FIRST SUBJECT DISCUSSED IN THE SLASHING-WEAVING SECTION of the Eastern Carolina Div., Southern Textile Association, spring meeting at Raleigh, N. C., was rubber-covered slasher squeeze rolls.

Mills using the rubber-covered rolls reported satisfactory results. One advantage given was the minimum of maintenance required for the rubber-covered roll in comparison with yarn- or blanket-covered rolls.

One mill using rubber-covered rolls on a hot-air slasher sizing 12s to 18s yarn at 80 to 85 yds. per min. buffs the rolls every 12 to 18 months. Wool yarn and blankets are costly, and although the rubber-covered rolls' first cost is high at the mill; they are cheaper to use over a long period of time.

There was a brief discussion of the West Point size box and air-controlled presser rolls.

On the subject of afterwaxing, the mills agreed that it was necessary for some yarns. Wax, heated with steam, was reported in use on nylon warps. Wax added to the nylon was 0.5% to 1.25% by weight.

One mill reported that it was using nylon loops in all its shuttles. From four to six loops are put in each shuttle at a 45° angle. The number of loops is dependent on the size of the filling yarn.

No one reported using the nylon loops for any yarn other than cotton. Some loops were being used on looms with center filling forks, but the loops were not as satisfactory as fur or bristles. One advantage given for the nylon loops was their low cost and long-wearing qualities.

The linkage-type parallel was discussed. This parallel is still in an experimental stage, and few mills have used it. Mills reported using the linkage-type parallels on X-2 looms and L-model looms with inconclusive results.

Plastic Shuttles Are Discussed

Plastic and laminated fibre-walled shuttles were discussed at length. Some mills said that the advantages of the new shuttles over dogwood and persimmon shuttles does not justify the extra cost.

One mill reported that its plastic shuttles were running two and three times longer than regular dogwood shuttles and cost only twice as much. Figures given for the laminated fibre-wall shuttle was 7,000 to 7,500 loom-hours of service.

Better boxing was said to be possible with the plastic shuttle, and weights of individual shuttles are more uniform than those of wood shuttles. The impression gathered from the discussion was that the high price was the only obstacle to universal acceptance of the plastic shuttle.

Some mills reported limited experience with aluminum lays. The aluminum lay costs more than the wood lay and is about 8 lbs. lighter. The reduction in weight was not listed as an advantage in running properties of the loom. One advantage given for the aluminum lay is the adjustable end that can be moved to accommodate shuttles of different lengths.

New officers were elected at the spring meeting of the Eastern Carolina Div., Southern Textile Association.

Worth Kirkman, Pilot Mills Co., Raleigh, was elected chairman; William E. Smith, Hadley-Peoples Mfg. Co., Siler City, vice chairman; Cary A. Phillips, Edenton Mill, Edenton, secretary.

New members of the executive committee are Marion Ellison, Cone Mills Corp., Hillsboro; and Gilbert C. Mays, Erwin Mills, Durham.

Better Machines and Materials Highlight PACKAGING Exposition

From what could be seen at the 26th National Packaging Exposition at Chicago this year, the problems peculiar to textile packaging are being resolved by improvements to machines and the development of better films for packaging.

Polyethylene films appear to have retained their leadership in textile packaging. This year's developments include a further increase in clarity and a higher surface gloss in the product of at least one manufacturer.

The suppliers of the original glamour film, cellophane, have modified the product to improve its shelf life; and it is still an important item in lightweight textile packaging. Excellent clarity and low price are favorable factors; and for some applications, laminations of cellophane with polyethylene combine the advantages of both materials.

Other contenders for the textile-packaging market include a polymer-coated Mylar film that can be heat-sealed on automatic packaging machinery, polyvinyl chloride and cellulose butyrate.

The smaller packaging machines that are most suitable for moderate-size operations have been improved so that bagging and sealing are done by one operator on one machine with little extra effort.

A further use for films is developing rapidly in the baler bag, featured by Bemis Bro. Bag Co. This container is used to hold six or a dozen units, each in its own bag, and no chip-board boxes are necessary. Costs and shipping weight are reduced for the manufacturer, and storage and disposal problems are simplified for the retailer by eliminating the paper boxes.

The more-expensive films, such as Mylar, are finding an outlet as an overwrap for boxed articles in the medium- to high-price brackets and are also being used in bag form for better-grade haberdashery items.

Suppliers note increasing pressure from chains and large retailers for prepackaging by the manufacturer. As noted previously, the baling of six or a dozen items in a transparent film is an outgrowth of this trend.

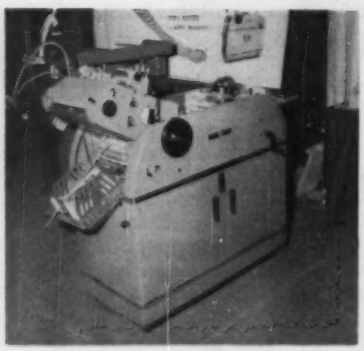
Carton Stitcher

Tops and bottoms of filled fibre cartons of various sizes can be stitched on an automatic machine developed by Acme Steel Co., Chicago, Ill.

Flat wire 0.103 in. wide by 0.028 in. thick is supplied from 10- or 25-lb. rolls to the machine. The stitcher forms, cuts, and clinches the wire in one operation. No retractable anvils or clinchers are used, and the contents of the carton are not damaged in the operation. Up to 700 cartons per hour can be closed by one operator. **(B-1)**

New Polyester Film

A polyester film that can be heat-sealed was demonstrated by Minnesota Mining & Mfg. Co., St. Paul, Minn. The product is designed for difficult packaging operations requiring great strength, impermeability to moisture, and chemical resistance. **(B-2)**



Bag-Imprinting Machine

A general-purpose imprinting machine was shown by Addressograph-Multigraph Corp., Cleveland, Ohio. Called the Multilith Model 1250, the machine works from electrotype, rubber plates, linotype or individual type fonts.

The unit is versatile and will handle all types of office duplication work as well as printing identifying data on stock packages. **(B-3)**

Bag Sealer

A compact unit that trims and seals preformed polyethylene bags was shown by Cook Engineering Co., Inc., Concord, N. C. The model is foot-operated and seals by means of a hot wire. Trimmings are blown away from the sealing area by air provided by a small blower included in the machine.

Cleveland Lathe & Machine Co., Cleveland, Ohio, is the selling agent. **(B-4)**

Shipping Containers

Corrugated-paper shipping containers for large and heavy textile items were featured by Tri-Wall Containers, Inc., New York 14, N. Y. Shown was a carton built especially for shipping 100-ft. lengths of 15-ft. carpentings. Triple walls provide adequate strength and puncture resistance. **(B-5)**

For more information, circle the B-number on Reader-Service post card.

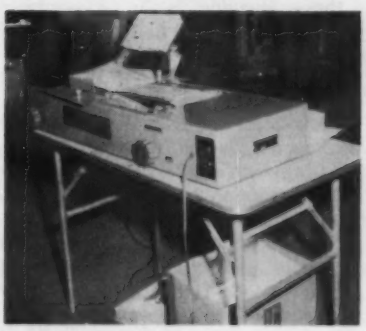
Automatic Filler and Sealer

Plastic bags are filled and sealed automatically by the machine shown by Topper Packaging Company, Sylmar, Calif.

Bags as small as 4x4 ins. and as large as 14x14 ins. with a 4-in. gusset can be accommodated on the machine. Speed will vary with the size of the item being packaged; an average is 15 packages per minute. (B-6)

Improved Films

Three new films for packaging were shown by E. I. du Pont de Nemours & Co., Inc., including a polymer-coated cellophane and two coated Mylar films. The polymer-coated Mylars can be heat-sealed readily without solvents. (B-7)



Bag Loader and Sealer

An improved bag-loading and sealing machine was shown by Tele-Sonic Packaging Corp., New York, N. Y.

New features include a built-in hot pad that seals the bag at a touch, and quick adaptation of the machine to packages of different sizes. By repositioning the guide arms, the machine will handle large or small units as needed.

The principle of air inflation of the bags is retained. (B-8)

Automatic Packager

A machine that produces completely wrapped packages automatically was featured by Hayssen Mfg. Co., Sheyboygan, Wis. The unit uses roll films of cellophane, Pliofilm or polyethylene stock and is equipped with an electric-eye registering device to handle printed films.

Originally designed for food packaging, the machine can be readily adapted to textile packaging. (B-9)

Decorative Tapes

Decorative tapes made of metalized Mylar were shown by Permacel Tape Corp., New Brunswick, N. J. The material can be embossed and printed, die-cut to various shapes to provide medallions for decoration, or used in tape form as a package sealer. (B-10)

Bag Former and Sealer

A machine that produces open-end bags as they are filled with shirts, shorts or other textile items was shown by Mehl Mfg. Co., Div. of Sydney-Thomas Corp., Cincinnati, Ohio.

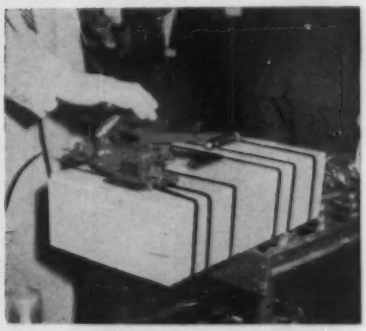
Doubled polyethylene film is fed over and under a guide between the leaves of which the item to be packaged is placed. A slight pull moves the item to a delivery chute, and the operator pulls down an arm that carries an electrically heated wire that cuts off and seals the open side of the package. (B-11)

Label Printer

Increased raw-stock storage is an added feature of the Model 80 label printer shown by Weber Marking Systems Div. of Weber Addressing Machine Co., Inc., Mount Prospect, Ill. A steel cabinet that also serves as a mount for the machine carries a 2-ft. roll of label stock.

The printer produces 105 labels per minute from rubber plates. Variable data can be made up on sticky-back rubber type and placed on the printing drum.

Weber stencils can also be used in the machine. (B-12)



Hand-Operated Strapper

Flat steel strapping can be tensioned, sealed, and trimmed in one motion by a strapping machine shown by Inland Wire Products Co., Chicago, Ill.

The strap ends are locked by partially puncturing the strap in several places at the overlap. (B-13)

CONTINUED ON PAGE 218

For more information, circle the B-number on Reader-Service post card.

How Merlin, Inc., Dyes ORLON SWEATERS

At North Bergen, N. J., Merlin, Inc., has made a specialty of dyeing Orlon sweaters in both circular-knit and full-fashioned types. The plant keeps quality up by—

- **Careful handling**
- **Close temperature control**
- **Finishing in a separate machine**

COVERED PADDLE MACHINES are used to dye the bagged sweaters. The gentle action of these machines minimizes creasing.

HYDROEXTRACTiON of the dyed or bleached sweaters is done carefully. Automatic speed controls prevent excessive speed.

MERLIN, INC., GETS RESULTS in dyeing Orlon sweaters by paying close attention to details of proper machine choice, temperature control at each stage of processing, and selecting the best dyes for the purpose.

The company also handles cashmere sweaters and some nylon garments, but the bulk of production is in full-fashioned and circular-knit Orlon sweaters.

The circular-knit garments are received in strings of approximately 32 sweaters in one of the popular lines. The first operation consists of turning the lengths inside out and bagging them individually in Dacron-mesh bags. Each bag will contain 8 to 12 lbs. of sweaters.

A preliminary scouring operation comes next. Merlin uses a laundry wash wheel for this operation, and the goods are worked in this machine for 15 mins. at 130 to 140° F. in a scour bath containing a synthetic detergent built up with tetrasodium pyrophosphate. The load is cooled and the machine drained off. The goods are then taken out and put in paddle-type dyeing machines.

Temperatures Changed Slowly

The dyebath is set at 120° F., and if the shade is a light color, acetate dyes are used to get the desired effect. The bath is brought to a boil in 30 mins. and held there until the shade is matched. Merlin has developed formula dyeing to the point where color adds are not often necessary on repeat lots; and for the pastel shades, dyeing time will run from 1 to 3 hrs. in most cases.

When the shade is right, the dye bath is cooled very gradually to avoid setting the creases and wrinkles that

occur from confining the sweaters in the bags. The cooling step is most important and cannot be hurried; otherwise, an allover pattern of crow's feet will be left on the goods.

For the darker shades, Merlin turns to the basic dyes of special types such as the Genacryl or Sevron colors. These dyes have to be handled differently from the disperse types because of their faster strike and because they do not level as easily.

Retarders Help Dark Shades

Procedure for the basic dyes includes the addition of sodium acetate and a retarder to the dyebath. The rate of temperature rise is slowed down so that after entering the goods at 120° F., at least 45 mins. is taken to bring the bath to a boil.

Merlin uses Retarder DO for the new, faster-dyeing merge of Orlon and Retarder LAN or Quaker X-1411 for the old merge. In all cases, the amount of retarder used will vary from 1 to 4%, the larger amount being required for the lighter shades.

The cationic basic dyes go on the fiber mainly at temperatures above 205° F. when retarders are present. If any dye adds are necessary, the bath is let cool down by shutting off the steam and letting the load coast until the temperature drops to 170° F. The dye is then added and the temperature returned to the boil.

After the shade is matched, the cooling-down process requires 35 to 45 mins., starting with shutting off the steam until the bath has dropped to 170 to 180° F. Then cold water is added and the bath is let flood over until the temperature has dropped to 110 to 120° F.

Extra Step Helps Finish

Finishing Orlon sweaters is a simple operation that is generally done in a fresh warm bath in the dyeing machine. Cationic softeners are preferred in most cases and are applied at a rate of 1 to 2% owg. Bath temperature is 110 to 120° F., and the process takes 15 to 20 mins.

Merlin takes an extra step in the finishing of sweaters by removing them from the dyeing machine and applying the finish in the laundry wheel. The mechanical action in the laundry wheel is greater than in a paddle machine and gives a softer, plumper hand to the sweaters.

Merlin produces whites with Textone and formic acid, using 2% Textone owg. and maintaining a bath temperature of 200 to 210° F. for 1 hr. The usual cooling procedure is followed after bleaching, and then a warm rinse is given. Then the load is antichlored with sodium bisulfite and rinsed and is ready for finishing.

After finishing, all sweaters are hydroextracted in centrifugal extractors that have automatic speed controls that prevent excessive speed that would intensify creases.

Merlin dries the sweaters in a battery of Huebsch dryers, maintaining a maximum temperature of 180° F. The sweaters are cooled off in the dryers before being unloaded as a final precaution against wrinkles. After drying, the circular-knit sweaters are turned and given a careful inspection by experienced operators for any trace of unlevel dyeing or faulty matching. Full-fashioned sweaters are individually inspected.

TUMBLER DRYERS, 22 in this battery, handle one or two strings of sweaters at a time. Automatic controls keep temperature at 180° F.

FINAL INSPECTION of circular-knit sweaters checks over-all appearance and shade match. Each string is examined on both sides.

ROVING FRAMES were overhauled and changed over to two-zone drafting by removing the middle top roll. A 2¼-lb. bobbin is produced every 25 mins.

FOUR LAPS from the breaker picker are made into one lap on the finisher picker to improve evenness. An 18-oz., 50-lb. lap is produced at 333 lbs. per hr.

How Boaz Cards RAYON *On the Cotton and Woolen Systems*

- Solution-dyed rayon is carded into stock for the same end products on two different machinery organizations at Boaz Mills, Inc., Boaz, Ala.
- The cotton machinery had to be modified to some extent, but the woolen machinery was set up and operated as it would have been for woolen carpet yarns.
- Here's how the two systems operate—

RAYON AND SOLUTION-DYED RAYON are carded on both the cotton and woolen systems to produce the same end products at Boaz Mills, Inc., Boaz, Ala.

Stock processed is 3-in., 15-den. staple fiber, and the end product is 0.95s to 2.40s yarn for tufted carpets. Here's how the fiber is carded.

Cotton System Is Modified

Originally set up to card and spin cotton only, Boaz has two lines of opening and cleaning equipment.

Line 1, used for the undyed staple, consists of five Saco-Lowell F5 feeder hoppers, a feed table, an Aldrich beater section, a No. 12 lattice opener, and a Lummus gyrator. This line feeds to two two-process pickers.

Line 2, which is much shorter, is used to open and blend the solution-dyed rayon. This line has two F5 hopper feeders, a feed table, and a gyrator, which feed to one two-process picker.

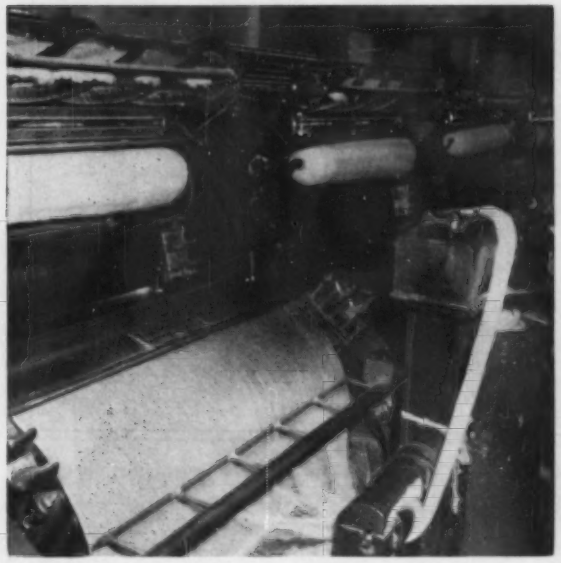
The cleaners in Line 1 are by-passed; so both lines do approximately the same amount of opening and blending. The only reason for using two lines is to keep the dyed and natural fibers separate.

Ten bales of rayon are opened and fed to Line 1. At times, bales of bright and dull staple are alternated to give a special effect. Solution-dyed staple is fed in the same proportion to Line 2.

Four Laps Are Blended

Four laps from the breaker pickers are fed to each finisher picker, which gives additional blending and evenness. An 18-oz., 50-lb. lap is produced at 333 lbs. per hr. by each picker.

Excessive beating is not required in processing staple fiber. Each picker has one Kirschner beater; the breaker



CARD SPEEDS AND SETTINGS on the cotton system vary substantially from standard. Some settings were opened up, and the flats were slowed down.

FOUR JACK SPOOLS on the front of each woolen card hold 56 ends. Roving goes directly to spinning with no intermediate processing.

beater runs 900 rpm., and the finisher beater runs 1,000 rpm. Evener motions are used on the finisher pickers.

Rayon staple fiber is carded fast at Boaz, since no cleaning is required. Production rate for 80-grain sliver is 25 lbs. per hr.

Different Settings Are Used

To card the long-staple rayon, 50 Pettee and H&B cards were modified slightly. Some speeds and settings were changed.

Solid screens were installed under the lickerin, and perforated screens were put under the cylinder. Mote knives were removed, and ball-bearing comb boxes are being installed.

Flats were slowed to less than 2 ins. per min., and the feed-plate-to-flat setting was opened to 15. Feed-plate-to-lickerin settings, depending on the fiber being carded, range from 17 to 34. Lickerin speed is 350 rpm., and cylinder speed is 165 rpm.

The fillet clothing on the cylinder and lickerin is ground light and fast for 5 to 6 hrs. every 12 days. Cylinders are hand-stripped on each shift.

Drawing Has Two Drafting Zones

Five-roll can-back Medley drawing, six ends up, was modified by taking out the second and fourth rolls to form two drafting zones. Total draft is six, and it is about evenly divided between the zones.

There are 30 deliveries each of breaker and finisher drawing that produce an 80-grain sliver at 172 ft. per min. Standard 12x36 cans are used, and the frames are doffed every 20 mins. One man tends 15 deliveries.

Roving is produced on frames with two-zone drafting. Eight 11x5½ Woonsocket machines were changed over by taking out the middle roll. Total draft is 4.25 for 0.45-hk. roving.

Spindle speed is 620 rpm., jackshaft speed 400 rpm., and front-roll (1¼-in. dia.) speed 225 rpm. A 2¼-lb. bobbin is produced every 25 mins. One man operates two frames.

Woolen System Reduces Operations

Last year, Boaz installed a substantial amount of woolen carding and spinning machinery [TEXTILE WORLD, April, '57, p. 108] in anticipation of a market switch to woolen yarns for tufted carpets. The machinery at present is being used to produce solution-dyed rayon yarns. Here's how the stock is carded.

Ten 450-lb. bales of staple fiber are opened and allowed to condition for about 4 hrs. Three bales at a time are fed into a Proctor & Schwartz feeder hopper that opens and blends the fibers.

Since oil cannot be used on the rayon fibers, they are dampened with water at this point to keep down static electricity. About 8 gals. of water are used for each 1,000 lbs. of stock.

The stock is then hand-fed into 12 Bramwell feeders attached to rebuilt Davis & Furber cards. The cards consist basically of a breaker section, a broad-band feed, a finisher section, and a tape condenser. Leather tapes are used.

Production Is 60 Lbs. per Hr.

Production is 70 lbs. of roving per hour at 100% efficiency. Actual production is about 60 lbs. per hr. Ten pounds of roving are put on the jack spools every 40 mins.

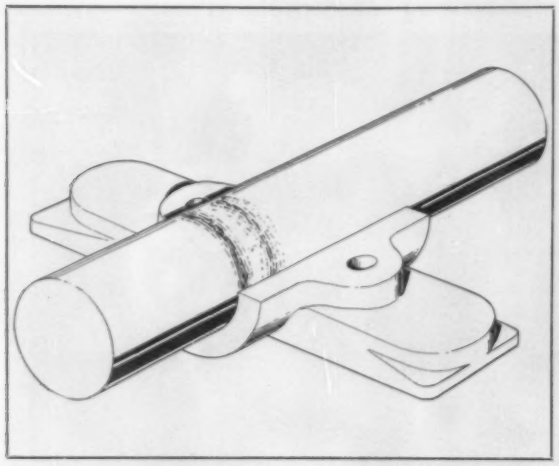
The roving weighs 245 grains per 50 yds. and has a draft of 125 to 130. Jack spools hold 56 ends, and there are four spools to each card.

The carding of solution-dyed rayon at Boaz is a relatively simple process because there are no burrs or trash to be crushed or removed. The cards are not equipped with Peralta rolls, although they can be added if necessary. Standard speeds and settings for woolen carpet yarns are used.

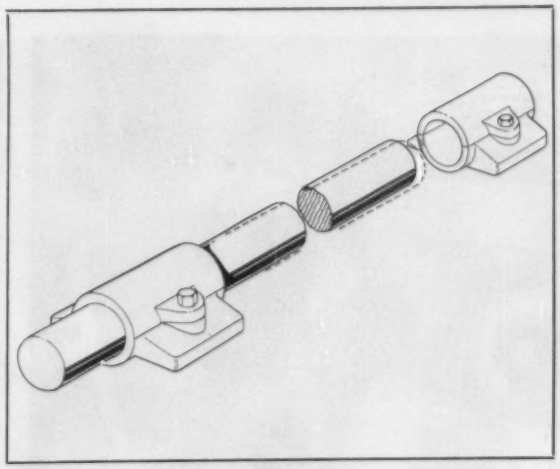
Cards Are Overhauled

Before the cards were put into use, mill personnel cleaned and overhauled them on the card-room floor. Bearings were replaced, feed rolls and lickerins reclothed, condensers stripped down and repaired, and oil holes cleaned out.

Boaz has had no trouble operating the woolen machinery since it was installed. The management says that the yarn made on the woolen system is just as good, if not better in some respects (bulkiness), than that made on the cotton system.



GRAPHITE or oil in the bearing will show point of contact when shaft is turned.



SHAFT inserted in one bearing and extended to the other will show misalignment.

How To ALIGN LOOM BEARINGS For Trouble-Free Operation

Many loom shafts and bearings are installed in a hit-or-miss manner. They align themselves through wear. Correct alignment of parts before the loom is started will—

- **Reduce wear of new parts**
- **Prevent strain and friction**
- **Eliminate a fire hazard**
- **Increase loom efficiency**

By WILMER C. WESTBROOK, Assistant Editor, TEXTILE WORLD

LIKE OTHER MACHINES, the loom has a number of shafts and bearings that wear and must be replaced. But unlike most other machines, the looms usually have these vital parts installed in a hit-or-miss manner.

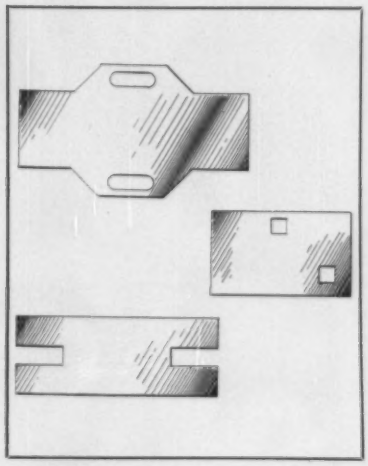
The average loomfixer does not know how, or does not take the trouble, to correctly align the bearings on his looms. As a result, a new shaft or bearing is soon worn as badly as the old one through heat and friction caused by misalignment.

But the damage does not stop with the part that is not correctly aligned. When a shaft does not revolve freely, a greater load is thrown on the gears, shafts, and supporting bearings all the way to the motor. Strain and wear occur to all the driving parts.

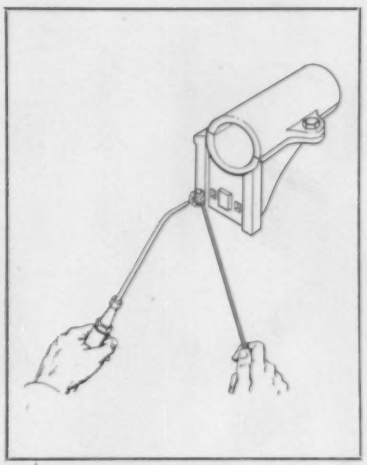
The motor is affected by the increased load. It may overheat, burn out a bearing, break down the insulation, and damage the armature. Many mill fires are caused directly by friction-generated heat or indirectly by damaged electrical insulation traceable to poorly aligned bearings.

When a new shaft or bearing is installed in a loom, the shaft should be turned by hand to be sure that it revolves freely. If the shaft is hard to turn for part or all of a complete revolution, the bearings should be aligned before gears, cams, or other attachments are fastened to the shaft.

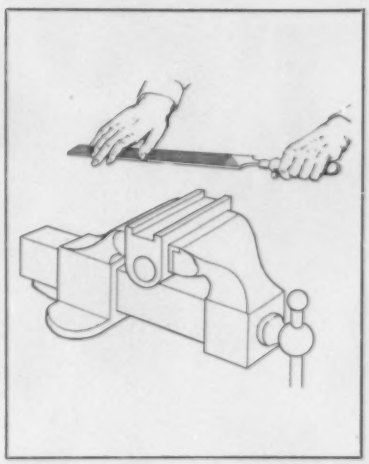
Shafts such as the camshaft, rockershaft, and let-off drive or pinion shafts can be used to align their own bearings. But a shaft or rod will have to be cut to align the bearings of the crankshaft, pickshaft, and take-up roll.



SHIMS should not be used unless they can be securely fastened like these.



POINTS of contact on bearings can be built up by welding or brazing.



FILING should be done with the bearing in a vise to get smooth, level surfaces.

Aligning loom bearings is really a simple operation, but the job sometimes requires time and patience.

Camshaft and crankshaft bearings are of the split type. Remove the cap and place the bearing on the loom frame. Coat the bearing surface with oil or graphite. Place the shaft in the bearings and turn it. A rough idea of the alignment necessary can be seen by the lubricant, or lack of it, adhering to the shaft.

Shaft Should Center the Bearing

After the bearings are squared as closely as possible, place the caps on them and bolt them securely in place. Place the shaft or aligning rod in one of the bearings, and push it through until the end of the shaft touches the opposite bearing. If the shaft exactly centers this bearing, your troubles are over and no alignment is necessary.

If the shaft does not center the bore of the bearing, some filing will be necessary. A study of the position of the shaft will show where and which bearing should be filed.

Don't file too much at one time. It is better to repeat the procedure several times than to cut off too much and have to use a shim or build up with a welder. Alignment must be done simultaneously on both a vertical and a horizontal plane.

When camshaft bearings are aligned, the cams and gears can be attached and the loom is ready to go. But for the crankshaft, the aligning rod must be removed and the caps taken off the bearings once more. When the crankshaft is seated, the bearings should be tightened a little at a time, turning the shaft meanwhile to see that it does not bind.

Don't Use a Shim

Solid-type bearings such as used for the take-up roll, pickshaft, and the shafts of the let-off motion can be aligned in the same way as those of the crankshaft and camshaft. The only difference is that the preliminary squaring of the bearings with the cap removed cannot be done.

When the base of a bearing needs to be built up, it is better to have stock welded or brazed on than to use a shim. However, a shim will do a good job if it can be securely fastened. For instance, a shim made of flat steel that has one or more holes through which the bearing bolts pass cannot slip out of place.

Shims that are held in place by compression should not be used because they will shift or fall out if the bearing becomes loose. Wood, cardboard, or other soft materials should not be used for shims between two metal surfaces.

Turn the Ratchet Wheel by Hand

In aligning the auxiliary camshaft bearings, attention should first be given to center girts. If these girts are squared and tightened firmly, the bearings will give little trouble. Tighten the girts with the camshaft in place to have them spaced correctly and prevent binding or end play.

The internal gear arrangement of the Roper let-off is a very precise mechanism, and the let-off pinion shaft must be aligned precisely. After the bearing is aligned and the let-off motion is re-assembled, turn the ratchet wheel by hand until the internal gear makes at least one complete revolution. Wavy cloth will result if there is any binding of the shaft or gears.

Loom bearings and shafts will give good service when they are correctly aligned and lubricated. But if a bearing begins to run hot for any reason, a chain reaction will be set up.

Heat will cause the metal to expand and this causes more friction. Also, the lubricant will boil and drip out of the bearing or evaporate. Both the shaft and the bearing will get hotter, drier, and tighter. Even if damage does not occur to other parts of the loom, the shaft and bearing will usually have to be replaced.

Follow These Simple Rules

So for efficient, trouble-free loom operation a few simple rules should be followed.

1. See that all bearings are correctly aligned and that the shafts turn freely in them.
2. Eliminate any end play of the shafts that can cause undue wear to shafts and bearings.
3. Keep all bearings and bearing caps tight.
4. Use the correct lubricant in the right way. See that oil holes, cups, reservoirs, and grease fittings are clean and that they are feeding the lubricant to the bearing surfaces as needed.

FLEXIDYNE DRIVE on roving frame permits smooth starts and stops. Power is transmitted by steel shot.

SPRAY SYSTEM built by the mill treats cotton with an oil emulsion at the hopper.

At Kings Mountain—

Modified Machines and Speeds Improve CARDING and SPINNING

Kings Mountain Mfg. Co., one of the oldest sales-yarn mills in North Carolina, has improved the quality of its 14s to 30s carded yarn spun on conventional equipment by—

- **Enlarging the opening room**
- **Reducing beater speeds**
- **Installing "dry-fluid" drives**
- **Modifying drawing frames**
- **Installing new winders**

KINGS MOUNTAIN MFG. CO., Kings Mountain, N. C., has 70 years of accumulated know-how in the highly competitive carded-yarn business. Here's how this 7,320-spindle mill cards and spins 14s to 30s sales yarn on conventional machinery and how some of the equipment has been modified.

Thirty-two bales of 1☆-in. Bright Middling cotton are laid down in the recently enlarged opening room. Stock is fed from 16 bales to one line of opening and cleaning equipment.

The line consists of one waste hopper, four Kitson blending hoppers, and three Centrif cleaners. About 275 lbs. of stock per hour are fed to one single-process picker that makes a 15-oz., 50-lb. lap.

Beater Speed Is Reduced

The picker, rebuilt by Aldrich, has a two-blade beater running 1,200 rpm., a porcupine beater running 1,050 rpm., and a carding beater running 900 rpm. The carding beater formerly ran 1,050 rpm., but the slower speed makes a better lap at this mill.

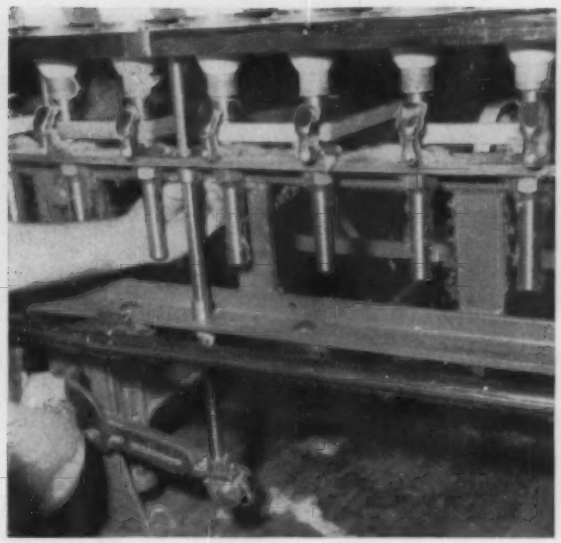
The picker is set up adjacent to the opening line so that one man can run both opening and picking machinery.

Kings Mountain recently equipped 12 of its 33 cards with the Dodge "dry-fluid" drive [TEXTILE WORLD, April, '57, p. 138] and plans to use the drive on all of them eventually.

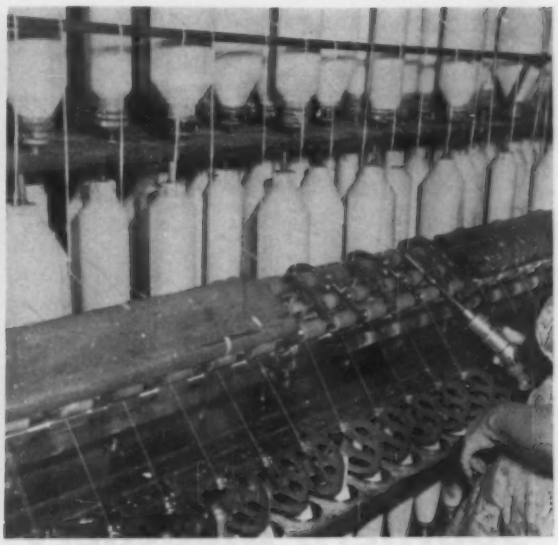
The 60-grain sliver, carded at 9 lbs. per hr., is made into drawing laps on a new Saco-Lowell 16-end lap machine.

About 1¼ mins. are required to make each lap.

Twenty deliveries of Saco-Lowell



LIFTING RODS are kept clean and free to move by lubricating them with lard oil.



ROLL-CLEANING SCHEDULE is strictly enforced since the mill does not have suction cleaning.

four-over-four one-process lap-back drawing frames produce a 60-grain sliver. Draft is 16. Front-roll speed formerly was 400 rpm. but was reduced recently to 350 rpm. to improve evenness.

Synthetic covering is used on all the top rolls, but the mill plans to replace the two back lines with fluted metallic rolls to grip the cotton tighter as it enters the drafting zone.

One man runs all five drawing frames and the lap machine.

Roving Bobbins Hold 15 to 22 oz.

Roving is made on seven 9x4½ and one 10x5 one-process roving frames. The 9x4½ frames make 2.30- to 3.30-hk. roving for 20s to 30s plied yarn. The 10x5 frame makes 1.50-hk. roving for 14s to 16s single yarn.

The 9x4½ frames put about 15 oz. of roving on a bobbin. Spindle speed is 900 rpm., and jack-shaft speed is 380 rpm. The 10x5 frame produces a 22-oz. bobbin. Spindle speed is 740 rpm., and jack-shaft speed is 290 rpm.

Doffing time for 2.30-hk. roving is 2½ hrs.; for 150-hk. roving, it is 3½ hrs.

Dry-Fluid Drive Operates Frame

An interesting feature of the roving operation is the use of a Flexidyne dry-fluid drive on the 10x5 frame. Power is transmitted by 2¼ lbs. of small steel shot, compared with 1.8 lbs. used in the card drives. Weight of the shot is varied as the load changes.

The frame is driven by a 3-hp. motor, but Superintendent J. H. Patterson says a 2-hp. motor would do just as well. The larger motor happened to be on hand, and the management believes in using available equipment as long as it is efficient.

Kings Mountain operates 52 Saco-Lowell and H&B spinning frames that have a total of 7,320 spindles. Spindles per frame range from 160 to 252. Rings vary from 2 to 3½ ins., gauge is 3 to 4½ ins., travelers 3-0 to No. 5, traverse 6 to 8½ ins., and package size 3 to 8 oz. Front-roll speed averages 140 rpm.

Six spinners and two doffers are used on each shift. The doffers handle all the frames and do some cleaning. Spinners, who run 12 sides each, pick four sides of rolls and back guides once a day, pick four sides of steel bottom rolls and back clearers once a week, and brush the rail every 2 hrs. The frames do not have suction cleaning, but Parks-Cramer overhead cleaners are used.

The 20s and 30s single yarn is wound into 3-lb. packages by two Abbott winders that are run by two operators and one fixer. The fixer has other duties, such as changing spinning numbers.

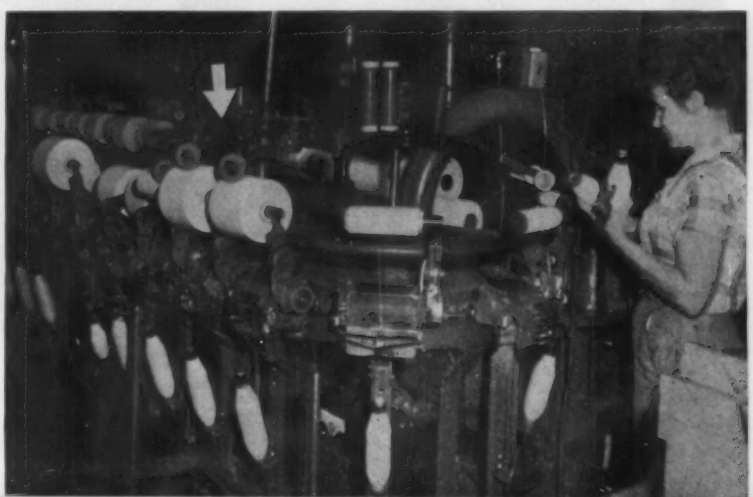
Twisters Are Modified

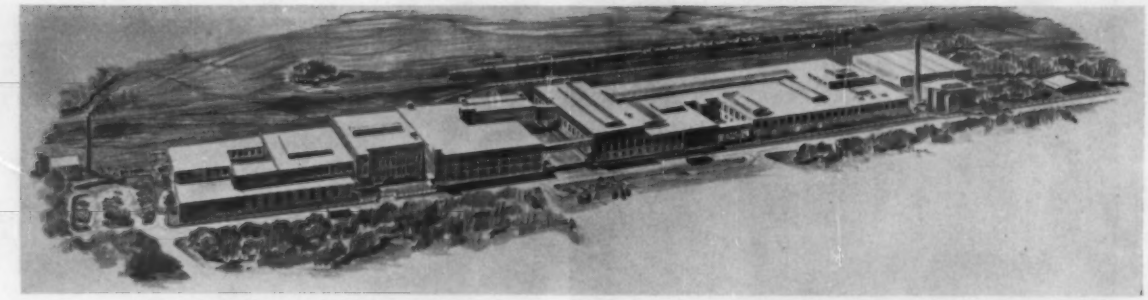
Sixteen 220-spindle Saco-Lowell twisters have been changed over from single band to four-spindle drive. Most of the production is two-ply yarn, but up to seven-ply yarn can be twisted.

The ply yarn is wound on two new Foster and one new Roto-Coner winders. These machines make 6- to 8-in. cones and Dyetex tubes. Hard cones are wound on six Universal winders.

Ball and snake warps are made on high-speed Cocker equipment.

NEW WINDERS that produce cones and dye tubes are equipped with an attachment (arrow) to prevent kinky yarn.





SOUTHERN BLEACHERY & PRINT WORKS, INC., added a new warehouse and built an addition to the print plant to centralize put-up, packing, and other operations that were formerly duplicated. The changes give more space for processing.

Southern Bleachery CONSOLIDATES and MECHANIZES

Southern Bleachery & Print Works, Inc., Taylors, S. C., has recently completed a modernization program that has brought the bleachery and the print works into a common focus. The results are—

- **Goods from both sources are centrally put up, packed, shipped, or warehoused**
- **All printing is done in one area**
- **Cloth handling has been mechanized to a high degree**

A RECENTLY COMPLETED CONSTRUCTION AND MODERNIZATION PROGRAM at Southern Bleachery & Print Works, Inc., has resulted in higher production, better coordination of processing, and more-efficient handling.

The plant was actually two units, a bleaching and dyeing plant and a print works. For many years, each unit operated vertically in some respects, such as put-up, packing, and shipping; and printing was carried on in both units.

Through the years, the need for more space and closer coordination of the units became more pressing. The company, in consultation with the engineering firm of Robert & Co. Associates, laid out detailed plans for the new construction and modernization.

To provide more space in the processing areas, a new three-story building for packing, put-up, and storage of finished goods was located midway between the bleachery and the print works. The new building provides 168,000 sq. ft. of space.

The put-up operation on the third floor is connected with the bleachery building by two bridges over which goods finished in the bleachery are moved to put-up. At the second-floor level, another bridge connects the bleachery with additional storage space in the new building.

Flow of goods through this packing, warehousing, and shipping building starts at the top, where finished goods are either yarded, doubled, or tubed and then sorted into lots, shaded, packed, and strapped.

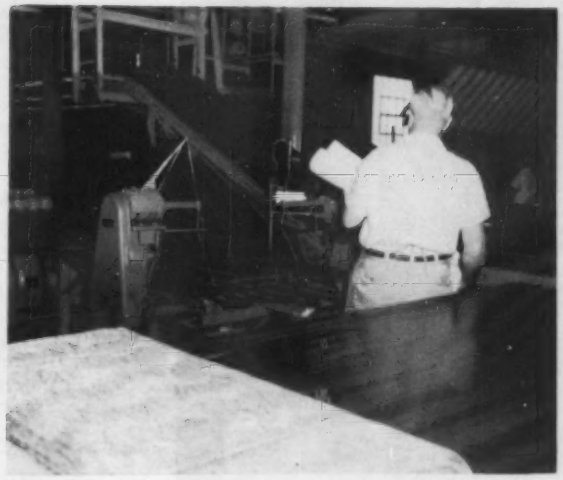
Handling Is Minimized

Conveyors take over as the pieces leave the hookers. Yarded goods are placed on a traveling-belt conveyor that takes them to an automatic tying machine that ties two light tapes around each cut.

An operator then places the pieces on a special pan on a large conveyor that takes the pieces past the shading bench. Here the pieces are properly allocated and stacked on a wheeled rack.

As the shades in the lot are completed, the racks are hooked to the underside of the conveyor, which moves them to a station where they are invoiced and packed. Then a corrugated-paper case is placed top down over the goods, and the case is sealed on the bottom.

The rack and cased goods are then guided to a machine that overturns rack and case, leaving the case open-end up at the head of another conveyor. The tilting action is reversed, and the rack is returned to service for another loads of goods. This system eliminates handling each piece and



GOODS FROM HOOKERS come to this automatic tying machine on a conveyor and are placed after being tied on the carousel conveyor that encircles the room.

PORTABLE RACKS are used to stack goods by shade and lot. The racks are hooked to a traveling chain that moves them to the casing and invoicing area.

packing it in the case.

The goods are conveyed to a weighing and strapping station where the case is finally sealed for shipment. The strapper then releases the case, and the conveyor takes it to the second floor of the warehouse. Goods for immediate shipment go to the first floor. There is ample room on each floor to handle goods in either category.

The operation proceeds smoothly and with a minimum of handling, in contrast with older methods of stacking, packing, and trucking where each operation required manpower and much backtracking.

To get the printing operation consolidated in one area, a 47,800-sq.-ft. addition was made outside the original print-room walls to accommodate the color shop and engraving shop and to make space for extra roll storage.

Space that was freed by this change and by centralizing packing, warehousing, and shipping has been put to good advantage.

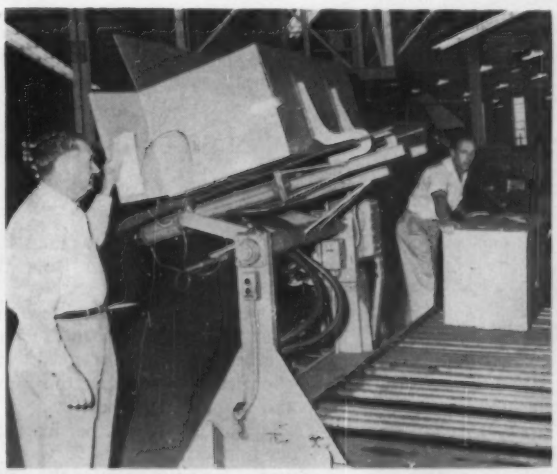
A new mercerizer and four new 90-ft. tenters, complete with pads and predryers, have been installed in one area to handle white and dyed goods.

A three-strand stack of cans operating at 40 lbs. pressure for primary drying after bleaching produces 600 yds. per min. of goods ready for dyeing, printing or finishing.

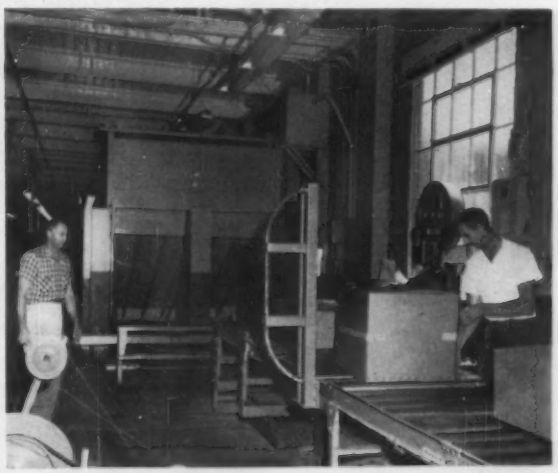
Print goods are now finished on seven 90-ft. ranges with pads, predryers, and auxiliary curing units that take care of resin and other special finishes.

Three new dyeing ranges for vat, naphthol, and direct colors, with added ageing and soaping equipment, have augmented the dyeing equipment.

With finished fabric flowing smoothly to a central area from improved and added machines, the bleachery and print works are now able to handle up to 5-million yds. per week.



RACK, GOODS, AND CASE are upended on this machine built at the plant. The cased goods are slid off onto the conveyor and the case travels to the weighing station.



WEIGHING AND STRAPPING the cases complete the operation. Chutes in the background convey the goods to the second floor for storage or to the first floor for more-immediate shipment.

CONVERTING ROVING cut the labor force 38 operators.

CARD-ROOM Improvements Pay Off at Alma Mills

Alma Mills, Gaffney, S. C., rebuilt its pickers, overhauled cards, and converted roving frames to one process.

Results—

- **Carding personnel reduced 57%**
- **Evenness improved at all machines**
- **Yarn and cloth quality better**

CARD-ROOM IMPROVEMENTS cut carding labor costs 41% at Alma Mills, Gaffney, S. C. The total number of operators in this department was reduced from 73 to 31½, or 57%.

In addition to producing savings in direct costs, the modernization program upped quality in every department of the card room. The improvement was immediately apparent in better Uster evenness readings all along the line and in the quality of the print cloth produced.

Here's what was done in Alma's card room and how the modernized machinery operates—

How Blending Is Done

In the opening room, Bright Strict Low Middling 1⅛-in. cotton is blended in six new Gastonia hoppers. Forty-eight bales are laid down, and feeding is from 24 of them.

The hoppers feed via a conveyor to two four-beater Junior cleaners and then to a Lummus gyrator back of the picker hoppers. Vertical openers formerly used were removed from the line.

Because of the relatively few machines in the line, speeds and settings are checked regularly to make sure that the machines are operating properly and at peak efficiency.

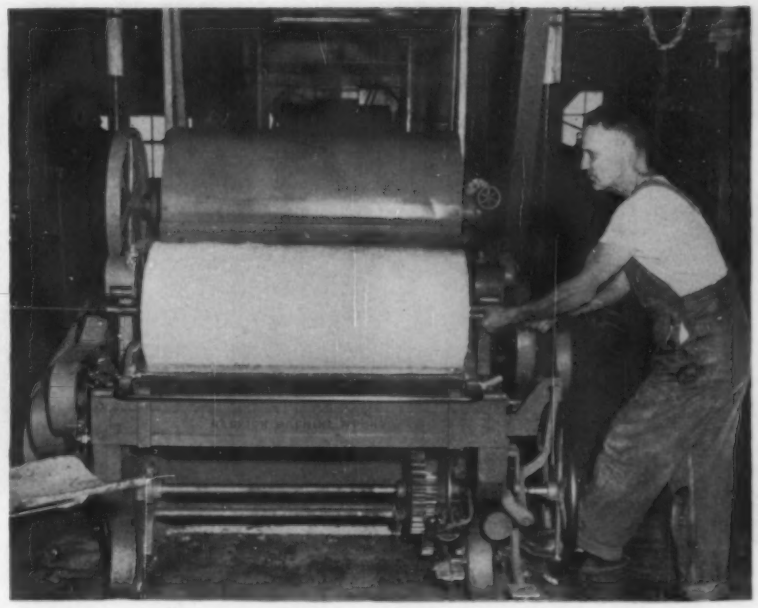
Production is 900 lbs. per hr. (150 lbs. per hopper), and 2.08% waste is removed. One man operates the opening room.

Alma's three Kitson pickers were

completely rebuilt by Aldrich Machine Works. Three beaters were installed: an Aldrich back beater, a two-blade middle beater, and a Kirschner front beater. The back beater runs 960 rpm., the middle beater 940 rpm., and the front beater 970 rpm.

About 2% waste is removed from the stock, which is made into a 12-oz. lap. One man operates the picker room.

The opening and picking departments produce enough stock in two shifts to supply the mill's normal requirements. No labor savings resulted from the changes made in these departments, but quailty and machine efficiency were improved substantially.



PICKERS were rebuilt, and three beaters were installed in each.

Cards Are Reworked

Alma has 46 relatively new Whitin cards and 20 Mason cards that were built in 1922. The Whitin cards were thoroughly checked and repaired where necessary. The old Mason cards were practically rebuilt in some instances. The work was done by the mill with the help of Sykes, Inc., Charlotte, N. C.

Lickerins, mote knives, clothing, chains, top flats, and feed rolls were replaced or reworked. Cylinders were surface-ground where clothing had to be replaced. Vacuum strippers were added.

The work paid off immediately in improved evenness. Before modernization, unevenness was 18 to 23; after modernization, the figure dropped to 10 to 11.

The cards produce a 55-grain sliver at 8.7 lbs. per hr. Settings are standard. Cylinder runs 176 rpm., doffer 8 rpm., lickerin 450 rpm., and flats 3 ins. per min. Cans are 12x36; waste removed averages 5.2%; and grinding cycle is 11 days.

Labor force per shift consists of two card hands, one grinder (first and second shifts only), and one fixer. Two operators per shift were eliminated by the changes.

Drawing Is Improved

Twenty 1947 Whitin breaker and finisher drawing frames were reworked by Gossett Machine Works, Gastonia, N. C. New stands, rolls, and gears were installed. Metallic top rolls were replaced with cushion rolls.

Upon completion of the work, unevenness at the finisher drawing dropped from 27 to 18, a 33% improvement.

Both breaker and finisher drawing run 112 ft. per min. and produce a 58-grain sliver that is put into a 12x36 can. Draft is 5.80 on the breaker and 5.90 on the finisher frames.

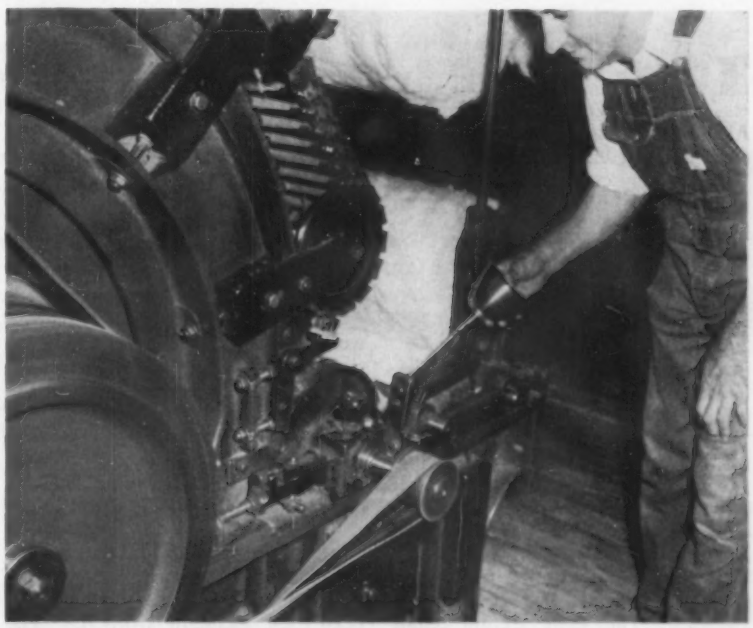
Two operators per shift are used in this department.

Biggest Savings at Slubbers

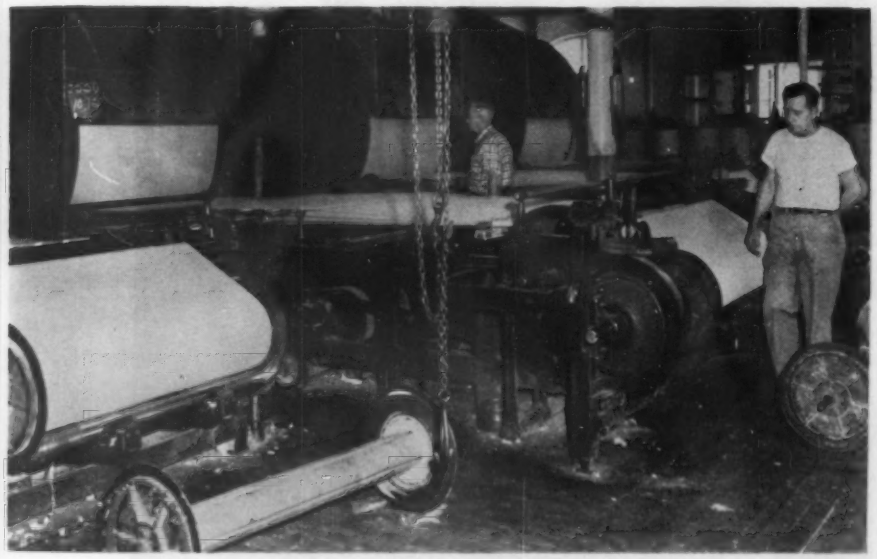
Alma's biggest labor saving in the carding department was made by changing from two-process to one-process roving. The change permitted a total reduction of 38½ operators for three shifts. Roving men, doffers, sweepers, roll pickers, frame cleaners, and speeder hands were eliminated.

Eight Saco-Lowell slubbers with H&B five-roll drafting were converted to one-process 9x4½ frames. These frames are now being converted to 10x5 packages.

At present, 1.45-hk. roving is made into 9x4½-in. packages that weigh 20 oz. net. Spindle speed is 960 rpm., jack-shaft speed 410 rpm., front-roll speed 162 rpm., draft 10.32, and doffing cycle 1 hr., 15 mins. The hank roving has a Uster evenness reading of 27 to 28.



BOTTLE OILERS were put on the cards when they were overhauled.



SLASHERS are the two-cylinder type and operate at about 36 yds. per min.

How WARPS Are Sized At Indian Head Mills

• The slasher room at Indian Head Mills, Cordova, Ala., is a good example of what can be done with know-how and existing equipment. There is nothing fancy about this slasher room, but it is sizing quality warps in quantity.

THE WARP YARN for 885 looms is sized on four Saco-Lowell slashers at Indian Head Mills, Cordova, Ala. Each of the slashers has a 5-ft. front cylinder and a 7-ft. back cylinder. Steam pressure of 10 lbs. heats the cylinders. Excess heat and steam are drawn off through stainless-steel and copper hoods.

The slashers have friction drives and operate at 36 yds. per min. on average sets. Beams for the mill's E- and X-2-model looms are 40 to 60 ins. wide and have 20- to 26-in.-dia. heads. A beam 40 ins. wide with 20-in.-dia. heads will hold 1,150 yds. of warp consisting of 1,918 ends of 14s yarn.

Indian Head All-Purpose cloth claims the distinction of being the oldest fabric brand name in America. A typical slasher set for All-Purpose cloth is composed of seven section beams, each containing 274 ends of 14s yarn. The 30-in. section beams hold 25,500 yds. of yarn, or enough to fill 22 loom beams.

Back Rolls Are Burlap-Covered

The size pickup is between 10½ and 11% for most sets. Stretch is held between 1½ and 2%.

Back squeeze rolls are covered with burlap, and the front rolls have wool blanket covers. Weight of the back rolls is 550 lbs., and the front rolls weigh 350 lbs. each.

The wool blankets are changed weekly. A new blanket is wound on the roll and the old blanket is wound on top of it. After a week's run, the old blanket is discarded, a new one is wound on the roll, and the blanket that was wound on the roll is placed on the outside. The burlap blankets run twice as long as the wool blankets.

The burlap-and-wool combination of roll blankets works extremely well on Indian Head's warps. Other types and combinations of coverings have been tried, including synthetics. The yarn has a tendency to stick to the cylinders when synthetic covering is substituted for the burlap on these slashers.

Size Is Homogenized

Size is mixed in two kettles. A large stainless-steel kettle holds 308 gals. of finished size, and a smaller kettle holds 222 gals. The size is made with lump pearl starch and is run through a Gaulin homogenizer, which operates at 1,600 to 1,800 lbs. pressure.

Two storage kettles mounted on a platform over the cooking kettles hold the finished size until needed in the boxes. Size in the kettles is held at 210° F., and the temperature of the size in the boxes is held at 206°.

Sized warps are stored on racks in the slasher room and in the drawing-in room adjacent to the weave room. Chain hoists on an overhead monorail are used to doff and move the loom beams. An electric hoist is used to handle the section beams.

Report of the—
1957 KNITTING ARTS Exhibition

• Sweater machines, women's-hosiery machines, and V-bed flat machines dominated the knitting machinery introduced in Atlantic City early last month at the 1957 Knitting Arts Exhibition.

• Chief improvement in sweater machines was directed toward increased production by stepping up yarn feeds from 24 to 32. In women's hosiery, machine improvements were in two-feed knitting.

• But more attention was also given to packaging and packaging machinery, with emphasis on more-automatic handling in packaging processes.

• Progress in yarns and sewing machines was also evident. Metallic yarns in particular are undergoing change to broaden their applications. One of the more-important new yarns was a round metallic yarn (foil and Mylar) for use in sewing machines. And sewing machines themselves showed several refinements.

• On these pages, TEXTILE WORLD reports in pictures and text all that was new at the 1957 Knitting Arts Exhibition.

Stitch Meter

The Stitch-O-Meter, shown by Supreme Knitting Machine Co., Inc., Brooklyn, N. Y., was used to set the stitches to the same length on all feeds on Supreme's machines. The yarn from each feed is run over a measuring wheel, which records the speed of the yarn on a dial.

The reading is recorded, and the yarn from the next feed is tested. The stitch cam is then adjusted while the machine is running until the two stitches are of equal length. The remaining feeds are then adjusted.

The device is being used here by TEXTILE WORLD's Jim Blore. **(A-1)**

Flat Machine

Universal Supramat S.F. is a V-bed machine shown by Stonehill Knitting Machine Corp., Brooklyn, N. Y., for knitting fancy collars. There are 12 yarn carriers, tubular locks, and a 10-needle rack.

The take-up has individual controls for sectional and over-all tension control. The take-off tension can be reduced when the machine is not running.

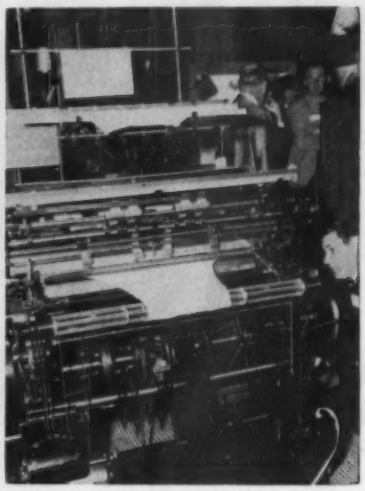
There are high and low butts on the front and back beds. An economizer chain is fitted. **(A-2)**

Fancy Rib Interlock Machine

Model SAI-PP, shown by Supreme Knitting Machine Co., Inc., Brooklyn, N. Y., is a rib interlock machine for patterned, striped, plain, rib, or interlock fabrics. There are 12 striping boxes and 12 stationary feeds, and each feed on the dial and cylinder has automatic tuck equipment.

There are pattern placers on all the feeds, and all feeds have three-position wheels. The dial has a dual cam track, a direct drive, and the standard Supreme take-up.

The 30-in.-dia. machine revolves at 17 rpm. and knits 28 yds. per hr. A 60-end yarn stand is fitted on the 12-cut machine, which was knitting 18s cotton yarn. **(A-3)**



Full-Fashioned Sweater Machine

A single-section 21-gauge full-fashioned sweater machine, shown by Wildman Jacquard Co., Norristown, Pa., was knitting 2/32s high-bulk Orlon yarn at 65 courses per minute, to knit a back and a front in 15 mins. The machine has a lace attachment, and individual control drums are 60 rows in circumference and 15 rows wide.

There are five carriers, and the needle-bar width is 30 ins. The machine has filling-in points and a V-neck attachment. **(A-4)**

Pile-Fabric Machine

The FBW-6 pile-fabric machine shown by Wildman Jacquard Co., Norristown, Pa., is a six-feed, 23-in.-dia. machine that uses carding units to produce fabrics for coats, linings, and plush.

The 10-cut machine produces 8 yds. of fabric per hour from 15s Dynel backing and a dyed Dynel and Orlon sliver. An air pipe is centered over the machine to remove excess lint, and a flexible pipe blows the lint into a box. **(A-5)**

Jersey Machine

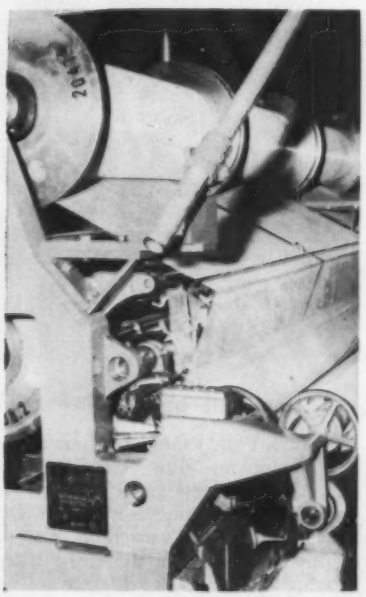
The Brinton jersey machine, shown by Scott & Williams, Inc., Brinton Fabrics Machine Div., Laconia, N. H., is now built with a frame that can be adopted for either Warner or Johnson drives. A hand control lever can be adjusted to allow the operator to start the machine from practically any position. **(A-6)**

For more information, circle the A-number on Reader-Service post card.

Flat Machine

The Suprafix SGU machine shown by Stonehill Knitting Machine Corp., Brooklyn, N. Y., is a 10-cut border machine that knits six strips at 18 rpm. on a 24-in. bed. Tubular cams are fitted, and there are high and low butts.

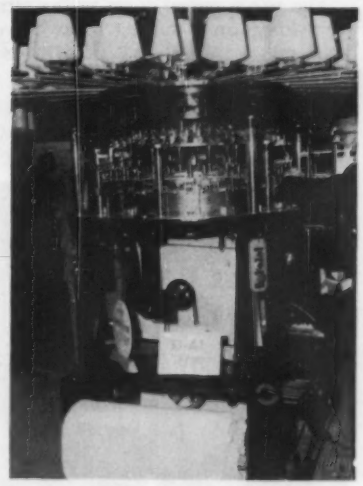
The machine has an economizer chain and is equipped with a course counter and a variable-speed drive. The drive can be disengaged to allow samples to be knitted by hand. **(A-7)**



Tricot Machine

The 168-in. tricot machine shown by Mayer Textile Machine Corp., West New York, N. J., was knitting unthrown nylon at 875 rpm. The yarn let-off device gets its signal from a rubber belt that encircles the yarn beam and drives a wheel to compensate for the yarn feed.

The machine takes up to 30-in. beams and is equipped with selvage straighteners. The sectional camshaft runs in an oil bath. There is a central oiling point for all rocker-arm joints. **(A-8)**



Sweater Machine

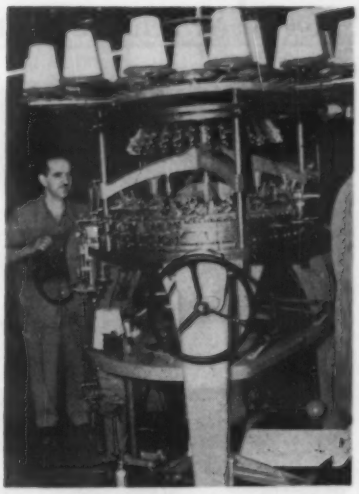
Model AI interlock machine shown by Wildman Jacquard Co., Norristown, Pa., is a 32-in.-dia. machine with 32 feeds. The machine knits about 4-doz. sweater pieces per hour and rotates at 22 rpm. at high speed and 12 rpm. at low speed.

The machine is of dogless construction, and the strips are separated by a nylon draw thread. The 13-cut machine was knitting 21s high-bulk Orlon. **(A-9)**

Flat Machine

Model AJUM machine, shown by Knitting Machine & Supply Co., New York, N. Y., is a double-lock jacquard transfer machine that has combination locks and individual control of yarn guides from both sides. The machine is suitable for fancy collars and trimmings.

The 10-cut 60-in. machine has a two-speed drive and transfers from back to front and front to back. There are skeleton jacquard cards on the front bed and 18 carriers. The machine travels at 22 rpm. in high speed and 12 rpm. in low speed. **(A-10)**



Interlock Sweater Machine

The interlock sweater machine shown by K & J Trading Corp., Brooklyn, N. Y., has 32 feeds. Rib cuffs are made in 1x1 rib from two yarns on alternate feeds, and 15 feeds are used to make the cuff. There are three hand-wheel positions and three legs to balance on any floor. The pancake motor is set in the leg. A blower works off the pattern chain to blow the needles at the end of each garment.

The 14-cut machine was knitting 70/2 Ban-Lon yarn at 23 rpm. to knit 40 sweater strips per hour. **(A-11)**

Flat Machine

A double-lock machine shown by Queens Machine Co., Brooklyn, N. Y., was knitting sweater fancy trim with a reversible solid-color design on either side of the fabric. The 10-cut machine is 60 ins. wide and has high- and low-butt needles and push jacks under each needle.

The yarn, stitch, and cams can be controlled from either side of the machine. The front and back cams work separately. The eight-carrier machine, which inserts a draw thread, was knitting 2/30s zephyr yarn. **(A-12)**

For more information, circle the A-number on Reader-Service post card.

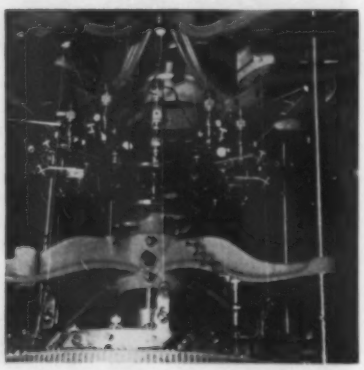
Raschel Machine

The Super Garant machine shown by Mayer Textile Machine Corp., West New York, N. J., is an 18-bar raschel machine with a 102-in. knitting width. It makes lace edging at about 300 rpm. The needles have long hooks for knitting lace.

The ground links work at a normal height with the drum at an 8-to-1 ratio. The pattern links work on a separate drum at a 16-to-1 ratio to reduce the shock of large needle moves.

The guides are set up according to the pattern, and the guides are screwed to the guide bar.

There are individual tension springs for each pattern yarn. Beams are made without flanges or paper. The take-up is driven by a stepless gear drive. **(A-13)**

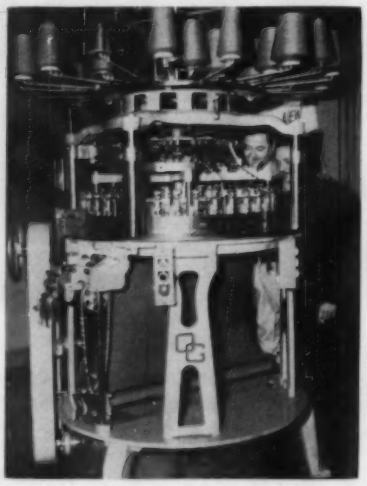


Tension Regulators

The Tensolator, made by Stop Motion Devices Corp., Brooklyn, N. Y., is a yarn-tension regulator combined with a stop motion. The yarn runs through a porcelain thread guide, a tension disk, a second porcelain guide, and a third porcelain guide on the end of a movable lever.

The bottom tension disk is pushed up by a flat spring that is regulated by a screw. The top disk is regulated by a knurled nut.

The arm is pulled down by the yarn when the yarn is subject to excessive pull, and the top disk is lifted to relieve the tension. **(A-14)**



Sweater Machine

The 32-feed, 32-in.-dia. sweater machine shown by Ordnance Gauge Co., Philadelphia, Pa., produces one sweater body length each minute. The fully automatic 16½-cut machine transfers from dial to cylinder with a single-butt solid transfer needle.

There is selective stitching on each feed, and a separating thread is made. Short sleeves with 1x1 cuffs can be made.

The machine was turning at 16 rpm. and knitted 2/36s high-bulk tow-dyed Orlon. **(A-15)**

Swim-Suit Machine

The rubber-girdle machine shown by Scott & Williams, Inc., Brinton Fabrics Machine Div., Laconia, N. H., has been converted to knit swim-suit fabrics. Two separate drum controls are used so that the cap is controlled separately from the pattern-wheel control.

The garment is shaped from the right drum control.

The machine runs raw rubber through the feed rolls and an oil bath, which have been redesigned in one unit. **(A-16)**

Pile-Fabric Machine

Model MLP-V, a 24-in. 18-cut machine built by Supreme Knitting Machine Co., Inc., Brooklyn, N. Y., was knitting pile-fabric designs on a reverse-plated jersey background. Special sinkers help to make a smooth pile suitable for shearing.

The machine has 32 feeds, and each feed has a sinker pattern wheel. Two yarns are fed at each feed. The pile yarn was 30/2 cotton and the ground yarn 30/1 cotton. The sinkers roll the yarn so that the ground yarn shows on the pile side when it does not loop. **(A-17)**

Spring-Needle Machine

The S-1 single-head machine shown by Tompkins Bros. Co., Syracuse, N. Y., has a new gearless drive. The drive to the cylinder is direct from the motor. The machine can be turned without the motor by disengaging a lever.

The 20-gauge machine was running fleece with six double-plush feeds on a 21-in. cylinder.

There are triple stop motions on each feed. An air line blows the lint from the cylinder, which turns at 60 rpm. **(A-18)**

Jacquard Strapping Machine

The Model MJT machine shown by Mac M. Rothkopf & Co., Brooklyn, N. Y., was knitting three-color jacquard fabric, 5 ins. wide, for fancy trim.

A jacquard card on the back needle bed allows a wide range of patterns to be made.

Rothkopf also showed Model MJ, a 12-cut border machine. The machine was knitting four borders from 2/30s Orlon to make 550 yds. per 8 hrs. **(A-19)**

Sweater-Trim Machine

Model DRB two-section machine, shown by Dubied Machinery Co., Long Island City, N. Y., has two 36-in. beds.

The double-lock cams work with high- and low-butt needles. Stitches can be transferred from front to back and back to front.

The 12-cut machine runs at 38 rpm. on 2/30s worsted yarn.

Rib cuffs for full-fashioned sweaters were made with a transfer stitch at intervals so that the strips can be topped on the bar with more rib wales than plain wales to get a more elastic rib. **(A-20)**

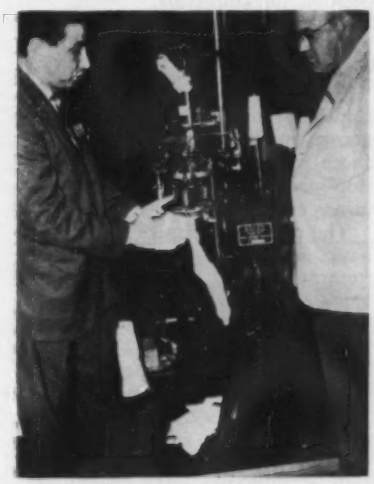
Pattern-Wheel Machine

Model PR-19, built by Scott & Williams, Inc., Brinton Fabrics Machine Div., Laconia, N. H., has been modified with a stronger cross bar and Scott & Williams parts.

The drive is now a Fairbanks pancake motor that has reduced the width of the machine. A new Bijur forced-lubrication system oils the cylinder and dial needles. An extra turning handle has been added to serve the remote side. **(A-21)**

CONTINUED ON PAGE 206

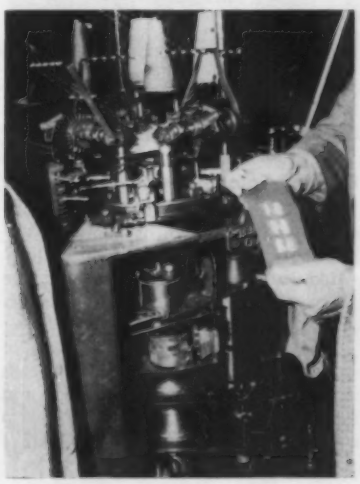
HOSIERY



Patterned-Sock Machine

Model R.S.V.P. machine, built by Edley Machine Co., High Point, N. C., is a patterned machine for Morpul socks with 84 needles on a 5-in. cylinder. The needle selection is from a 25-step drum. A tying-in yarn is used for the pattern. When the sock is pulled, the pattern stands out.

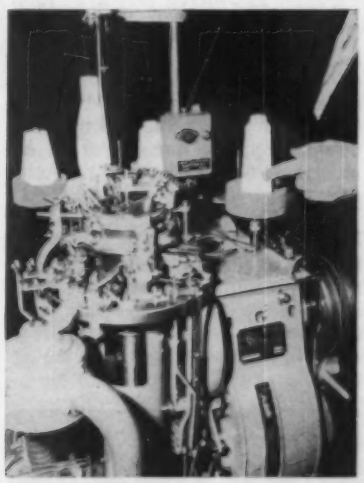
An auxiliary yarn finger is controlled from the main drum, and the needles not selected to take the rubber yarn take the tying-in yarn. The machine rotates at 150 rpm. and knits 8-doz. pairs of socks per 8-hr. shift. **(A-22)**



Men's Hosiery Machine

Three CK-A machines were exhibited by Textile Machine Works, Reading, Pa. One machine with 84 needles was knitting eight-color argyle socks, a machine with 112 needles was knitting a float pattern, and a 168-needle machine was knitting a design with an overplaid attachment.

The overplaid machine has a five-finger striper attachment on each of the four feeds. A ring on the sinker ring oscillates during patterning and throws certain fingers out of action to produce patterns. **(A-23)**

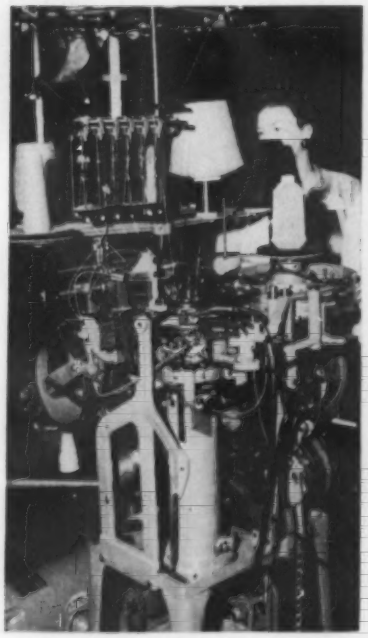


Seamless-Hosiery Machine

A 400-needle 3¾-in. seamless-hosiery machine shown by La Mode Hosiery Co., Hollywood, Fla., was knitting knee-high hosiery with the rubber top knitted to the leg. A 7X rubber was laid in on alternate needles for the top, and the make-up was automatic.

The yarn ends are cut out with an electrically controlled heater wire positioned on the yarn clamp. This device comes into action when yarn changes are made from the pattern chain. A suction-type take-up is fitted. Four micromesh designs can be made. **(A-24)**

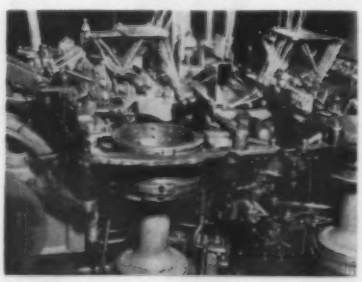
For more information, circle the A-number on Reader-Service post card.



Argyle-Hosiery Machine

Model AA3 machine, built by H. E. Crawford Co., Inc., Kernersville, N. C., has two new attachments. One device knits three-dimensional effects on socks. Levers from the back pattern drum control the picks to pick up one needle on one side of the cylinder and two needles on the other side.

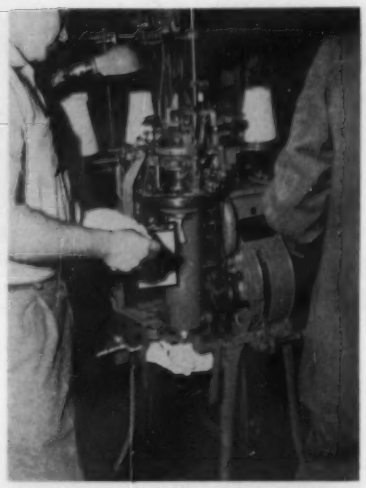
A striper unit allows the use of 10 colors to put stripes in at any part of the sock in circular knitting. The four-finger control drum can be used to reinforce the heel and toe with nylon. (A-25)



Argyle-Hosiery Machines

Model SCOP-SE, shown by Hemphill Co., Subdivision of Draper Corp., Hopedale, Mass., has pattern drums that have been increased to 50 steps so that diamonds can be knitted in stages of one-needle steps. The leading needle can be made to tuck so that the design has a straight, clear edge.

An attachment on another SCOP machine allows an extra two yarns to be knitted on each side to increase the pattern scope. The device works from two extra steps on the front shog drums for the overplaid to move two levers over the yarn fingers and cross the yarns. (A-26)



Cushion-Sole Machine

Model ETR 2x2-rib cushion-sole-sock machine, shown by Scott & Williams, Inc., Laconia, N. H., has eliminated the saw-tooth sinkers, and the dial has no fins. A new type of rocking sinker controls the fabric.

The machine knits 6 doz. pairs of socks in 8 hrs. from two ends of 12s yarn with 14s in the high splice and foot. The dial shogs for the make-up and shogs back for the 2x2 rib. (A-27)

Anklet Machine

Model ARA 2-400 anklet machine, built by Hemphill Co., Subdivision of Draper Corp., Hopedale, Mass., is a 160x3-in. machine designed to make anklets with a true 2x2-rib top. The needles are shogged in the welt to knit the make-up.

The stitches are transferred from the dial to the cylinder in two stages. The first transfer course brings alternate needles forward to transfer, and the second course brings all needles forward. A picot top can be made with one screw adjustment. (A-28)

Children's-Hosiery Machine

The children's hosiery machine shown by Fidelity Machine Co., Inc., Philadelphia, Pa., is a 144x3-in. machine with a 10-color yarn selector and knot tyer. A large pattern drum with jacks lifts levers to put the yarns in position for knot-tying.

The individual electronically controlled drive slows the machine for yarn changes.

A switch is thrown to turn the machine at 7rpm. for close checking. The needles in the dial are operated from above the dial by jacks. A gillotine stop motion stops the machine if the yarns get caught.

The machine produces 24 socks per hour, and it can be easily changed from 1x1 to 2x2 rib cuffs. An automatic cutter on the separating thread attachment allows socks to be quickly separated. (A-29)

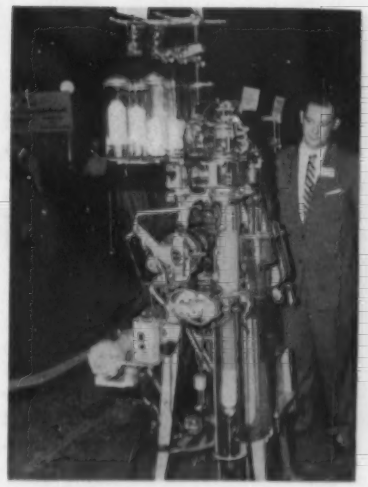
Two Seamless-Hosiery Machines

Two Booton seamless-hosiery machines were shown by United States Hosiery Corp., New York, N. Y. The machines are 474- and 420-needle models, and they have two feeds each.

A needle-oiling device constantly keeps the needles, sinkers, and main bearings lubricated. A suction take-up device is operated from a ½ hp. blowing unit.

The cylinder speed is 188 rpm., but it slows to 40 rpm. for each yarn and operation change. The speed change is on the motor. The dial is driven from a gear at the top of the cylinder. (A-30)

For more information, circle the A-number on Reader-Service post card.



Seamless-Hosiery Machine

The two-feed 400x3¾-in. seamless-hosiery machine built by Morris Speizman Co., Inc., Charlotte, N. C., runs at 190 rpm. to knit a stocking in 10 mins. The machine is built on high legs and is fitted with a Scott & Williams tension device.

There is an automatic oiling device for the needles and sinkers. When the yarn from the second feed is introduced, it is locked in by knitting on alternate needles controlled by jacks. A pattern was knitted in the welt, and the leg was knitted in micromesh. **(A-31)**

Two-Feed 474-Needle Machine

An electronically controlled two-feed seamless-hosiery machine shown by Fidelity Machine Co., Inc., Philadelphia, Pa., knits a stocking in 11 mins. The 474x3¾-in. machine was running 15-den. nylon to make micromesh stockings.

The double feed goes out of action on the gore line of the heel, and it goes into action on the opposite side of the heel and overlaps six needles so that no holes show. A delayed loose course is made three courses later than usual to provide for easier looping. **(A-32)**

Seamless-Hosiery Machine

The Model PVG seamless-hosiery machine shown by Staroba Industrial Research Co. Ltd. Toronto, Ont., is a two-feed machine that was knitting honeycomb micromesh. The pattern drum is arranged around the cylinder.

A moisture box is used to contain the yarns. The stockings are joined together as they are knitted and are separated with a draw thread. Tension is provided by a pair of rollers. **(A-33)**

Seamless-Hosiery Machine

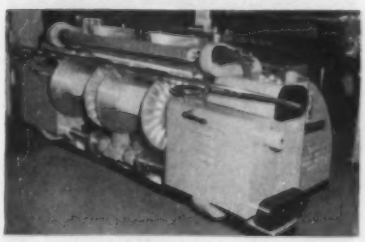
Model KN, shown by Scott & Williams, Inc., Laconia, N. H., has several improvements. The two-feed stitch cam is now controlled separately to the auxiliary-feed clear cam. The gap closer has been removed, and the auxiliary-feed finger is now movable to improve the lap. Micromesh is now made on the auxiliary feed instead of the main feed to eliminate the plain course in the instep. **(A-34)**

Sock Machine

The Carolina B-5-SS knitting machine for Morpul socks, built by Morris Speizman & Co., Inc., Charlotte, N. C., is a 60-needle, 5-in.-cylinder machine that was running four ends of 6s yarn to knit 2x2 tops. The makeup is made in 1x1 selection, and the 2x2 selection is done with jacks.

There are electric stop motions on all yarns. The machine knits 9 doz. pairs of socks in 8 hrs. **(A-35)**

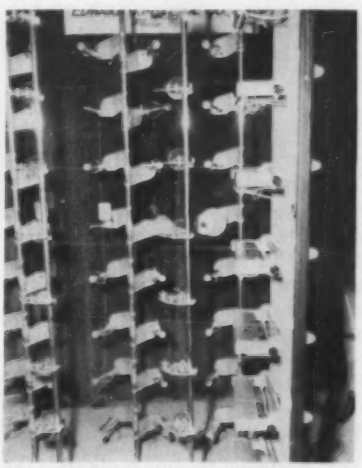
YARN PREPARATION



Tricot Warper

A multiple-beam tricot warper with 14- to 50-in. beam capacity was shown by Cocker Machine & Foundry Co., Gastonia, N. C. Two 14- or 21-in. beams can be run simultaneously.

Change-over time for different beams is approximately 45 mins. A push-button system is used for doffing. The warper has pneumatically operated accumulator rolls and is backed electrically to reduce tension on the warp. **(A-36)**



Warping Accessories

A heavier, stronger swing-arm assembly for creels was shown by Edward J. McBride Co., Philadelphia, Pa. Larger packages are more readily secured and rigidly supported.

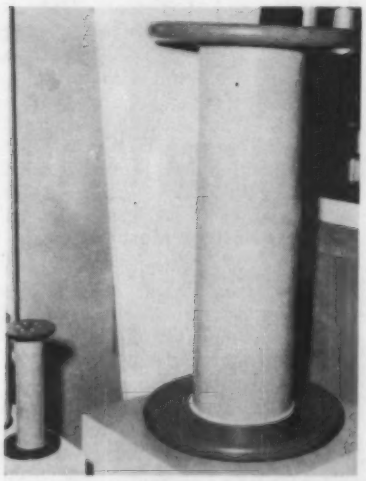
A new Quick-Change large-package holder that supports packages with inside diameters of 2 ins. or greater was also shown. A press-button thumb release permits quick change from one style of package to another.

Also shown was a new indicating-light system for warping creels that instantly locates a broken end. Only the light at the bank where the broken end occurs will light. **(A-37)**

Comber Trumpet

A comber trumpet made of Heanium that is said to retain its inside diameter almost indefinitely was displayed by Heany Industrial Ceramic Corp., New Haven, Conn. **(A-38)**

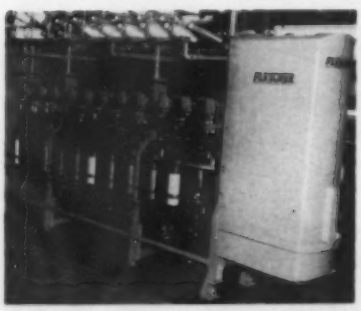
For more information, circle the A-number on Reader-Service post card.



Twister Bobbins and Pirns

A line of Gyrotex bobbins that hold from 10 oz. to 4 lbs. of yarn was shown by Steel Heddle Mfg. Co., Philadelphia, Pa.

The bobbins are balanced without the use of compensating weights. Stainless-steel flyer ferrules have full-length press-fit to resist movement. Special screws permit high torque that holds heads against heavy yarn loads. Bushings are keyed to prevent rotation. (A-39)



Doubler-Twister

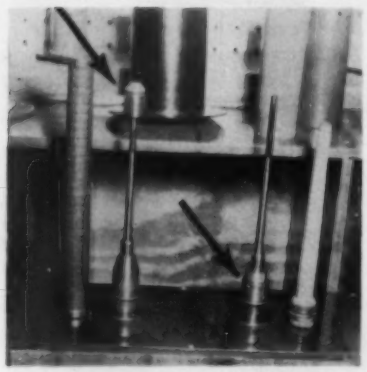
The Master Duplex doubler-twister for synthetics, natural, and novelty (ratine, seed, bouclé, and loop) yarns was introduced by Fletcher Works, Philadelphia, Pa. Rings are 6 ins. in diameter.

The machine features bobbin capacities to 4½ lbs. of filament yarn and 2½ lbs. of spun yarn. Spindle whorls to 2½ ins. in diameter permit greater belt contact and more-accurate twist. Two-head, taper-top, and taper-end packages can be produced. (A-40)

End-Break Detector

An end-break detector built by Lindly & Co., Inc., Mineola, N. Y., is installed between the warper and the creel to stop the warper when an end of yarn breaks. A beam of light is projected from one element to a prism on the other side of the yarn sheet.

The light is reflected back, and the yarn runs between the two beams. If the yarn falls, the beam is interrupted and triggers the stop motion. (A-41)



Spindle-Lock Adapters

Adapters that lock paper tubes and wooden or plastic bobbins on spindles were shown by Engineered Plastics, Inc., Gibbonsville, N. C. The locking arrangement, which basically is a spring (arrows), does not rely on friction. The wind and tension of the spring hold the bobbin firmly on the spindle. (A-42)

Yarn Spool

A disposable plastic spool was shown by MetLon Corp., New York, N. Y. The bearing surface of the spool is very small so that little tension is required in running the yarn off completely. (A-43)

Butterfly Thread Guide

A butterfly thread guide for the Roto-Coner that keeps yarn from snagging between the eyelet and the bracket was shown by Heany Industrial Ceramic Corp., New Haven, Conn. (A-44)

Removable-Head Bobbin

A bobbin with a paper barrel and detachable plastic or aluminum heads was shown by Engineered Plastics, Inc., Gibbonsville, N. C. The heads can be switched to produce a reverse twist, and the paper tube can be used as a shipping package. (A-45)

Ceramic-Eye Drop Wire

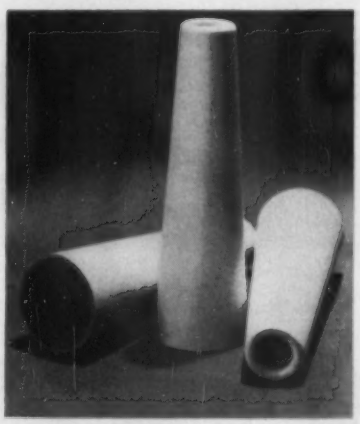
A drop wire for high-speed warpers that has a ceramic eye was shown by Heany Industrial Ceramic Corp., New Haven, Conn. The ceramic eyes last many times longer than metal eyes. (A-46)

Aluminum Tricot Beam

A 25-in.-dia.-flange aluminum tricot beam was shown by Milton Machine Works, Inc., Milton, Pa. The beam at the show was 51 ins. long and had a 7¾-in. barrel. The company is also making a 30-in.-dia.-flange beam. (A-47)

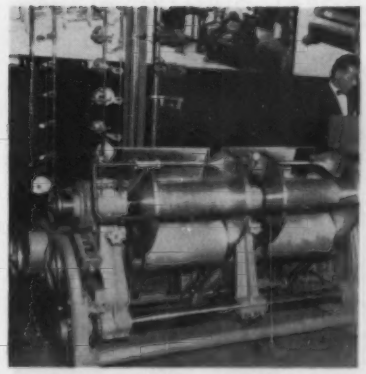
Tricot Beams

Two aluminum tricot beams designed especially for nylon were shown by Hayes Industries, Inc., Jackson, Mich. One beam is 30x42 ins. in size. The other has a forged end for added strength so that it can be filled with 15-den. nylon. The rib construction of the head gives extra strength and lightness. (A-48)



Nylon-Shrinking Cone

A lightweight 3°31′ cone for twist-setting and shrinking nylon was shown by Sonoco Products Co., Hartsville, S. C. The cone, made of paper, leaves no stain on the yarn, and no foil wrapping is required. (A-49)



Tricot Warper

A warper shown by Robert Reiner, Inc., Weehawken, N. J., is made to take two 21-in. beams, one 42-in. beam, or one 50-in. beam for raschel work. The warper is built low for convenient doffing, which can be done on the floor or on a truck.

A Dynamatic eddy-current clutch for accurate speed control is installed. The 7½-hp. motor drives the warper at 50 to 600 yds. per min. The tachometer speed control is on the presser roll. Electric brakes are installed for fast stopping. (A-50)

One-Piece Aluminum Bobbin

A one-piece aluminum bobbin with no cracks to trap fine yarns was shown by Allentown Bobbin Works, Inc., Allentown, Pa. The bobbin comes as either a regular or transfer-type take-up and can be made in any size. It is built to withstand the tremendous pressures of Helanca or other continuous filament nylon yarns. (A-51)

Improved Spinning Ring

The Herr conical ring, which has been modified to permit the use of the Lincoln Centro-Matic lubrication system, was shown by Herr Mfg. Co., Inc., Buffalo, N. Y. The improved ring permits higher spindle speed, gives longer traveler life, and reduces ends down. (A-52)

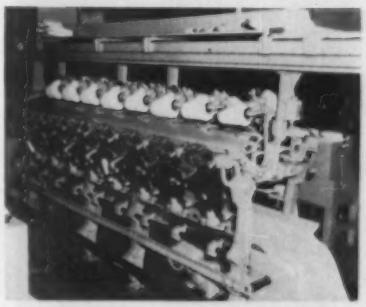
Adjustable Tension

The Pat-End tension for winders, quillers, and warpers, which can be adjusted to handle light or heavy synthetics yarns, was shown in operation on a Fletcher Speedex winder-redraw machine by Heany Industrial Ceramic Corp., New Haven, Conn.

For zero- and low-twist yarns, tension is gradually added from the bottom hooks upward. For heavy-denier yarns, maximum tension is applied at the bottom hooks. (A-53)

Take-up Bobbin

A 2-lb. Hi-Temp take-up bobbin that holds yarn from one full nylon pirn was exhibited by Cloverleaf-Freeland Corp., Hazelton, Pa. The bobbin, constructed of heavy-gauge aluminum to withstand high-temperature conditioning, was designed for use with the Universal Model 550 stretch machine. (A-54)



Improved Cone Winder

An improved Model 202 knitting-cone winder was shown by Foster Machine Co., Westfield, Mass.

New features of the winder include a microsetting slub catcher that visually indicates the proper setting of the slubber blades and an automatic bobbin sorter that conveys all doffed bobbins to the end of the machine, where partially filled bobbins are deposited in one truck and empty bobbins in another. (A-55)

FIBER AND YARN

Textured Yarn

A high-bulk textured yarn called Saaba was introduced by Universal Winding Co., Providence, R. I. Made on a special attachment for the Model 10 ring twister, the yarn can be finished with either a soft or hard hand. End products can be laundered without pilling or shrinking, and they hold their shape for the life of the yarn. (A-56)

Round Metallic Yarn

A round metallic sewing-thread yarn covered with Mylar was shown by Standard Yarn Mills, Glendale, N. Y. Used for direct stitching, the yarn does not pull loose. (A-57)

Skein-Dyed Orlon

Skein-dyed 3- and 6-den. Orlon bulk yarn was shown by American Thread Co., Inc., New York, N. Y. (A-58)

Colored Metallic Yarns

Metallic yarns in a range of shades were shown by Dobeckmun Co., Cleveland, Ohio. The new Lurex yarns are colored by incorporating pigments in the adhesive that welds the layers of foil and Mylar. (A-59)

Nylon Separator Threads

Nylon separator threads for circular-knit fabrics were shown by Grove Nylon Co., Scranton, Pa. The threads can be located easily after dyeing or finishing. (A-60)

High-Tenacity Mylar

A metallic yarn nearly twice as strong as the regular Mylar was shown by MetLon Corp., New York, N. Y. The new product is said to run well in knitting machines and retains the washability, resistance to heat, and durability of the original product. (A-61)

Type 6 Nylon

Its new Type 6 nylon filament yarn and staple were shown by American Enka Corp., New York, N. Y. Special item was the 15-den. two-filament yarn for knitting two-thread women's hose. (A-62)

Ban-Lon Products

A wide assortment of knitted products made from Ban-Lon yarn was shown by Joseph Bancroft & Sons, Wilmington, Del. Garments included sweaters, dresses, girdles, lingerie, and socks. (A-63)

Synthetic Staple Fiber

Wide commercial uses for its new Verel synthetic staple fiber were shown by Eastman Chemical Products, Inc., Kingsport, Tenn. The staple is available in 2, 3, 5, 8, and 16 den. dull and bright. (A-64)

For more information, circle the A-number on Reader-Service post card.

Boarding Machine

Acfab, a conversion unit to increase production of Paramount horizontal retorts up to 30%, was shown by Paramount Textile Machinery Co., Chicago, Ill. The conversion unit has a shaft that is intermittently driven from a speed reducer and a ½ hp. motor.

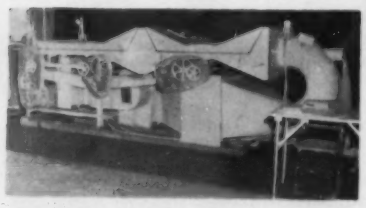
Cam drums on the shaft actuate the forms so that four forms come out at one time to be stripped and clothed. The carriers are moved sidewise by pneumatic cylinders. (A-65)

Laboratory Package Dyer

A package-dyeing machine that can be used as a pilot unit for dyeings to be produced in quantity was on view from Scholl Ltd., Zofingen, Switzerland. The machine is made of stainless steel throughout and can be used for pressure dyeing. (A-66)

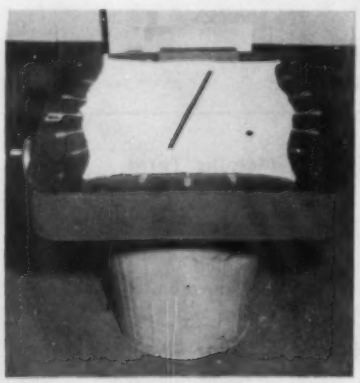
Nylon-Yarn Lubricant

A new nylon-yarn lubricant called Stat-O-Lene was shown by H. C. Harding, Inc., Philadelphia, Pa. Developed especially for use on women's seamless-hosiery knitting machines, it is described as an antistatic oil with good lubricity. It is especially effective in the plastic-tube draw-offs. (A-67)



Knitted-Fabric Dryer

Tubular knitted goods can be dried at the rate of 14 yds. per min. on 8-oz. weights of cotton fabric in a machine shown by Joseph Pernick Co., Inc., Maspeth, N. Y. Controlled tension and adjustable spreaders help produce well-balanced fabrics. Automatic temperature control is available if necessary. The machine handles goods directly from the extractor. (A-68)



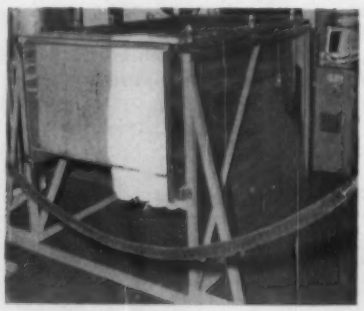
Gauge for Knitted Fabric Shrinkage

A mechanical means of tensioning knitted fabric for shrinkage measurement was shown by United States Testing Co., Hoboken, N. J. Twenty individual mounting pins form an expanding framework for the test specimen when a hand crank is turned. Restriction of the free movement of the framework by tension in the specimen registers a residual shrinkage that can be translated in terms of force to restore the specimen in grams. (A-69)

Package Extractor

The Whirlwind extractor, which is available with automatic hydraulic or air brakes, was exhibited by Fletcher Works, Philadelphia, Pa.

Features include a self-balancing mechanism, deep basket, explosion-proof motor, and an emergency hand brake. A finger-tip timer control is available at small extra cost. (A-70)



Skein-Dyeing Carrier

Bulked synthetics yarns in skeins are dyed without snarls or tangles in a double-pole carrier developed by Smith, Drum & Co., Philadelphia, Pa. The lower row of poles prevents the yarn from riding up when liquor flow is reversed. (A-71)

Coning Oil

A new coning oil made for use with Ban-Lon and other types of textured yarns was shown by Laurel Soap Mfg. Co., Philadelphia, Pa. Good lubrication, combined with strong antistatic properties, help reduce snagging and pulling. (A-72)

For more information, circle the A-number on Reader-Service post card.

Hosiery Inspecting Machine

An Inspectomatic machine for turning and inspecting hosiery was modified by Specialty Manufacturers & Sales Co., Acworth, Ga. to process full-fashioned stockings in chain form. A clipping attachment saves seamer's time.

The stockings are drawn from a plastic box to the inspecting form. The clipper cuts the ends when the form is turned. About 200 doz. pairs of stockings are turned and inspected per day. (A-73)

Sock Transfer Machine

The Paramark Model 12 is a transfer machine built by Paramount Textile Machinery Co., Chicago, Ill., that transfers up to 2,400 doz. pairs of socks per 8-hr. shift. The socks are laid on a conveyor that moves the socks under a rubber-covered roll that presses the sock on the transfer.

Transfers are drawn from a roll under the table, and the socks are laid on the table. The heating iron is controlled by a 600-w. element, and there are thermostatic controls for the iron that keeps it at a constant temperature. (A-74)

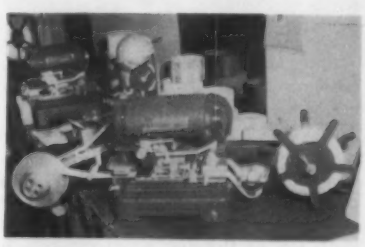
Hosiery Inspecting Machine

The Marvel-X machine, built by Marvel Specialty Co., Paducah, Ky., is for examining and turning half-hose of all sizes and styles. Four brass tubes on a capstan can be turned to the size required. The operator slips on a sock and turns the form for 100% inspection.

The sock is drawn through the tube as the operator releases it, and it is deposited in a dye bag. Air pressure in the tube can be reversed by a foot pedal to give more freedom to draw on heavy socks. (A-75)

Sweater Looper

The sweater looper shown by Tricoma, Inc., New York, N. Y., is an open-dial looper that stitches at 400 stitches per minute. The points face up at an angle; and the point ring can be turned backwards by disengaging the needle from the fabric, moving a lever, and turning the ring. (A-76)

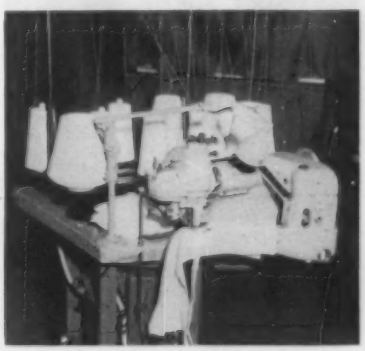


Label Marker

A machine that marks, rolls, or stacks pressure-sensitive or gummed labels for hand-attaching to garments was displayed by Soabar Co., Philadelphia, Pa. The Model 22 unit handles up to 3x1$\frac{7}{8}$ ins. (A-77)

Collar Machine

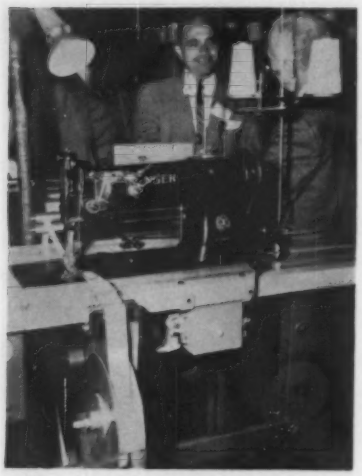
Collars can be trimmed, turned, and pressed on an air-actuated automatic machine shown by American Safety Table Co., Inc., Reading, Pa. The machine is available in ACE $\frac{1}{2}$ die Model CTTP2701 and ACE $\frac{1}{4}$ die Model CTTP2601. (A-78)



Flatlock Machine

Flat seams sewed by four needles, four loopers, and a cross-thread carrier are produced by the Type 1301 and 1301-I machines demonstrated by Willcox & Gibbs Sewing Machine Co., New York, N. Y. Improved lubrication permits sustained speeds up to 4,000 stitches per minute. (A-79)

For more information, circle the A-number on Reader-Service post card.



Sewing-Machine Stop Motion

Stop motions for continuously running sewing machines were shown by Stop Motion Devices Corp., Brooklyn, N. Y. A wire runs on the foot of the machine and is actuated when the shuttle thread runs out.

A reset button is used to keep the machine from being started until it is reset. A stop motion for yarn breakages is installed for each yarn. A control box under the table operates the clutch on the motor. **(A-80)**

Flat-Bed Seamer

Plain sewing or lap-seam felling for a variety of purposes can be done on the Class 1500 machine shown by Willcox & Gibbs Sewing Machine Co., New York, N. Y. Bearings are sealed with lubricant. The stitch can be varied from 6 to 26 stitches per inch. Production is 4,500 to 5,000 stitches per minute. **(A-81)**

Looper Attachments

The Model-P looper, built by Southern Textile Machinery Co., Paducah, Ky., has a thread-measuring device to give increased elasticity to the looped parts. The thread runs between a rubber roller and a steel roller. The rollers turn as the needle backs up, and they can be adjusted to give a wide variance of feed.

A high-collar guard allows collars to be looped easily without pinning them up. The guard takes the collars off the point ring and raises them above the needle stitching position. The points are stainless steel.

A new trimmer allows a selvage edge and stitch-to-stitch fabric to be joined without cutting the selvage. The device separates the two pieces of fabric so that the looped side can be trimmed, and no unraveling by hand is required. The device can be moved to trim both sides. **(A-82)**

Pattern Marker

The location of buttons, pockets, darts, or designs to be applied is easily established with the Beaver Drill-Marker shown by Beaver Cloth Cutting Machines, Inc., New York, N. Y.

A hollow needle injects a colorless dye visible in ultraviolet light through as many as 100 layers of fabric. The spots left by the dye are easily seen in black light. Larger solid needles may be used for dry marking. **(A-83)**

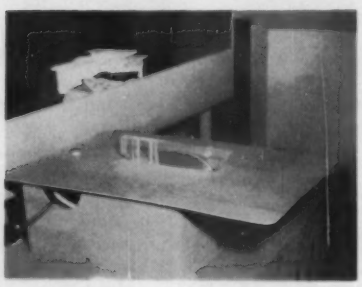
Improved Sewing Light

An incandescent light that produces 300 foot candles at a distance of 4 to 6 ins. from the work was shown by American Safety Table Co., Inc., Reading, Pa. The Model 16-BM-702 light is for table mounting, and the Model 16-BM-703 is mounted on the sewing machine. **(A-84)**

Bobby-Sock Turning Machine

The Cuffomatic machine for turning the cuffs of bobby socks has four cylinders with four wire fingers each to turn the cuffs. The machine is made by Specialty Manufacturers & Sales Co., Acworth, Ga. Socks are drawn on the cylinders by hand.

The cycle is automatic and lasts for 15 secs. so that two pairs of socks are processed each 15 secs. After the cuffs have been turned, the socks are dropped on a conveyor and delivered to the next operation. **(A-85)**



Fabric Slitter

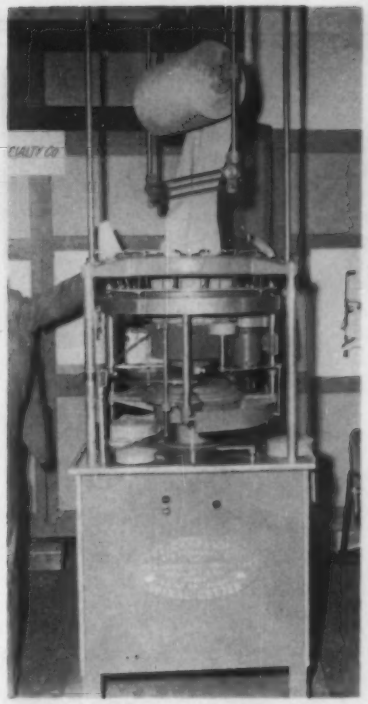
Sweater units can be separated and other cutting operations performed by a slitting machine developed by Beaver Cloth Cutting Machines, Inc., New York, N. Y. The 6-in. knife has a plastic guard and top-mounted sharpener. Work surface is 16x24 ins. **(A-86)**

Label-Sealing Machine

High-frequency radio waves are used to activate a resin that firmly attaches labels to garments without sewing in a machine demonstrated by Progressive Electronics Co., Passaic, N. J. Production is up to 450 doz. components or 300 doz. garments per day. J. & H. Label Processing Co., Passaic, N. J., applies the resin to the label ends. **(A-87)**

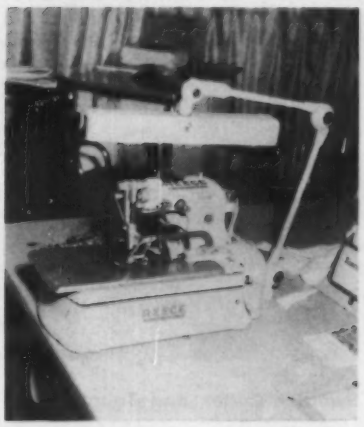
End-Labeling Machine

Automatic placement and sealing of diaper bands on the ends of pairs of men's and boy's socks can be done by a machine made by Halm Instrument Co., Glen Head, N. Y., and shown by Western Printing Co., Teaneck, N. J. Production is 1,200 to 1,600 doz. pairs of socks per day. **(A-88)**



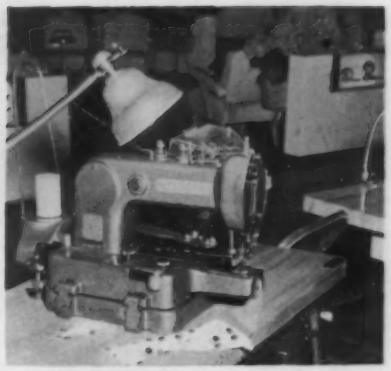
Collarette Cutter

Continuous production of spiral-cut collarette stock from circular-knit fabrics is possible on a machine shown by Utica Novelty & Mill Specialty Co., Utica, N. Y. The machine will cut collarette for 250 doz. ribbed necks or 290 doz. flat-knit necks per hour. The machine stops automatically when the roll of collarette is of the desired diameter. **(A-89)**



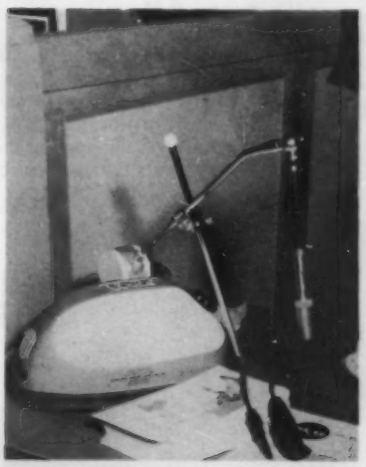
Shank-Button Sewing Machine

Shank buttons are fed, positioned, and sewed on automatically by an improved machine displayed by Chandler Machine Co., Ayer, Mass. The machine is operated by a single foot pedal. **(A-90)**



Label-Sewing Machine

An improved-model label sewer was shown by Reece Corp., Waltham, Mass. The machine produces an adjustable overcast stitch that can be set automatically for length to suit labels from ¼ to 1½ ins. in width. Threads are trimmed automatically. **(A-91)**



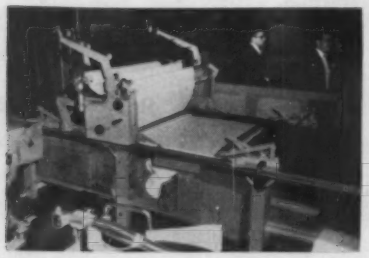
Air-Operated Mender

A mending machine that can be operated as a latching machine or a pulled-thread repairing machine was introduced by Stanford Marley Distributing Co., Inc., New York, N. Y. Called the Suma Velox, the unit will produce up to 4,000 stitches per minute. **(A-92)**

Electronic Needle Positioner

Sewing operations are speeded up by a sewing-machine attachment developed by American Safety Table Co., Inc., Reading, Pa. By means of a synchronized auxiliary motor, the machine needle may be stopped in the up or down position by manipulating the treadle or a knee lift. **(A-93)**

For more information, circle the A-number on Reader-Service post card.



Cloth-Laying Machine

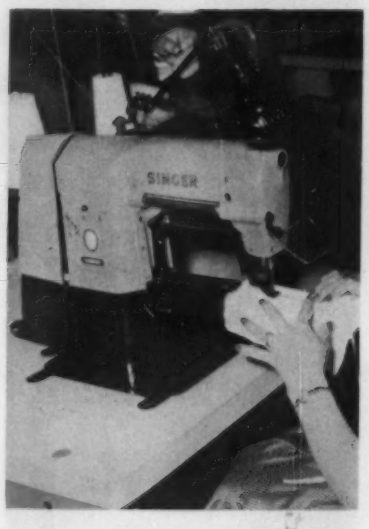
A manually operated cloth-laying machine was displayed by Cutting Room Appliances Corp., New York, N. Y. The machine features positive feed at controlled tension and rubber-faced end catchers. Selvage alignment is by manual adjustment. The machine can handle rolled or yarded goods. (A-94)

Stocking Repair Needle

Women's hosiery can be repaired efficiently with a hand-operated needle with a special latch design shown by Stanford Marley Distributing Co., Inc., New York, N. Y. A double action built into the latching device eliminates stitch-dropping. (A-95)

Overedger and Shirrer

A high-speed overedging machine was introduced by Singer Sewing Machine Co., New York, N. Y. The Model 246-16 machine sews fabrics made from natural or synthetics yarns and will gather as well as sew when a knee- or foot-operated lever is pressed. Speeds up to 5,500 stitches per minute are possible . (A-96)



Bar-Tacking Machine

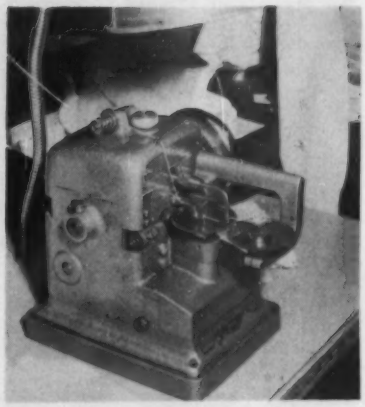
The Model 269 W 26 bar-tacking machine shown by Singer Sewing Machine Co., New York, N. Y., produces up to 2,000 stitches per minute on lightweight materials. The seam is formed by 8 staying stitches, 17 covering stitches, and 3 tying stitches adjustable from $\frac{1}{8}$ to $\frac{5}{8}$ ins. in length and from $\frac{1}{16}$ to $\frac{5}{32}$ ins. in width. (A-97)

Imprinting Machine

Labels can be imprinted with variable data at the rate of 150 per minute on a machine developed by A. Kimball Co., New York, N. Y. A rerolling attachment is available. Featured is a device that changes the data to be imprinted without demounting the type or plate from the machine. (A-98)

Sweater Cutter and Taper

Cardigans can be cut and tapes for the buttons and buttonholes attached on a machine introduced by Ginsberg Machine Co., Inc., New York, N. Y. A moving belt feeds the full-fashioned sweaters into the cutting head, and both tapes are sewed on smoothly in one operation. (A-99)

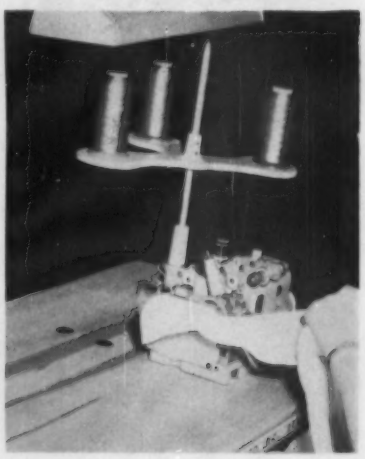


Flat Seamer

A disk-feed single-thread machine shown by Bonis Bros. Machinery Corp., New York, N. Y., produces flat seams for attaching sweater cuffs. It is marketed as the Model BK-10. (A-100)

Label-Printing Attachment

An attachment for printing additional information on woven labels such as contents, size, etc., was shown by Markem Machine Co., Keene, N. H. The attachment is for use with the company's Model 126 label machine. (A-101)



Shirrer and Overseamer

Overseaming and continuous or intermittent shirring is performed on the Model M-3DWS1 sewing machine displayed by Merrow Machine Co., Hartford, Conn. The shirring motion is adjustable to suit the degree of overfeed wanted. (A-102)

CONTINUED ON PAGE 210

For more information, circle the A-number on Reader-Service post card.

Sweater Finisher

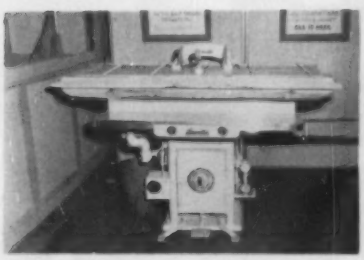
A production model of the Paris sweater finisher is now available from Garment Finishing Corp., Cambridge, Mass. Automatic timing of the steaming-drying cycle and quick manual adjustment for all sweater sizes are featured. A uniform finish and reduced labor costs are claimed for the machine. (A-103)

Examining-Turning Form

A nonsnagging examining-and-timing form for seamless hosiery was shown by Synthane Corp., Oaks, Pa.

The form has a channel or groove in the small end where the stocking rides during the turning operation to prevent contact with the heavy welt yarns in the stocking top. The groove also prevents rubbing the seam against the boot yarn. The stocking is turned before inspection instead of after.

A slot in the large end of the form contains a graduated scale for checking the length of the stocking. The scale may be changed as necessary. (A-104)



Automatic Flat-Bed Press

Steaming and drying are automatically controlled in a flat-bed press shown by Goldman Pressing Machine Corp., New York, N. Y. Variations in the cycle from 2 to 14 secs. can be made by setting the timing mechanism to suit the work at hand. The machine is steam-heated and actuated by compressed air. (A-105)

Edge Sealer

Bags made of polyethylene can be sealed and trimmed on a rotary sealing machine shown by Amsco Packaging Machinery, Inc., Long Island City, N. Y. Up to 1,000 linear inches per minute can be sealed by the machine, which is equipped with a conveyor that may be fed manually or automatically. Adjustments permit sealing in any plane from vertical to horizontal on films to 6 mils in thickness. (A-106)

Bag-Filling Machine

An improved model of a bag-filling machine was demonstrated by Tele-Sonic Corp., New York, N. Y. Now complete with a temperature-controlled heating element, the machine can be used to fill and seal polyethylene bags. There is also added provision for quick adjustment of the guides so that items of various sizes can be packaged. (A-107)

Box Assembler

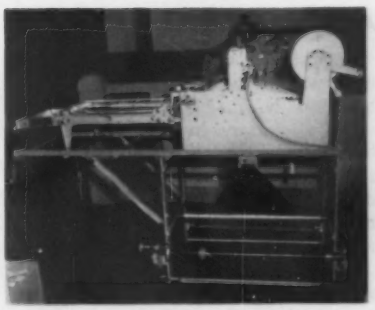
An automatic box-assembly machine was shown by Kaumagraph Co., Wilmington, Del. Called the Kauma-Loc, it assembles boxes from flat blanks and can be used directly in a packaging line. (A-108)

Expandable Carrier

A gusseted envelope-type box made of coated stock was shown by E. W. Twitchell, Inc., Philadelphia, Pa. Designed to carry ¼ to 1 doz. pairs of women's hose, the package can be used to the point of sale to the consumer or discarded at the retail store. (A-109)

Sweater Finisher

Automatic sizing, steaming, and drying are done on sweaters made of synthetic fibers by a machine displayed by New York Pressing Machinery Corp., New York, N. Y. The machine can be adjusted quickly to accommodate different sizes of sweaters, and the steaming-drying cycle is variable to suit the work at hand. (A-110)



Bag Maker

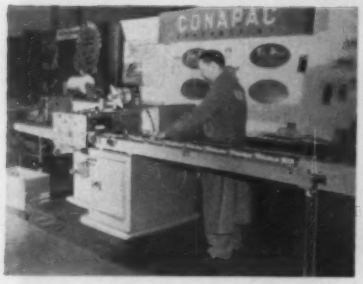
Side-weld pouches can be produced from gusseted or regular polyethylene tubing or sheeting on a machine demonstrated by Conapac Corp., New York, N. Y.

Sealing is done by a hot knife pressing against a rubber roller under controlled tension. A delivery system removes and stacks the bags.

Electric-eye registration for printed film is standard equipment, and a static eliminator and counter are also provided.

Bags ranging in size from 2 to 27 ins. can be made from 14-in. tubing, and side-weld pouches from 3 to 24 ins. wide and 14 ins. long can be made from flat stock. (A-111)

HANDLING, INSPECTING, PACKAGING (Continued)



Automatic Packager

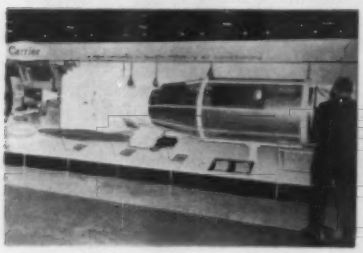
A machine that makes, fills, and seals packages suitable for soft goods was displayed by Conapac Corp., New York, N. Y. The article to be packaged is placed between two strips of polyethylene, and the packages are formed and sealed continuously. Stiff paper stock or board may be used for one side of the package, and coding information may be imprinted on the package by an accessory. The Model B machine is available in 6- or 15-in. widths to handle items of various sizes. **(A-112)**

Bag-Making Machine

Polyethylene sheet stock or tubing can be used to produce side-welded bags on a machine demonstrated by Amsco Packaging Machinery, Inc., Long Island City, N. Y. Made by Simplex Packaging Machinery Div., Food Machinery & Chemical Corp., Oakland, Calif., the unit produces 130 bags per minute from tube stock and 65 bags per minute from flat stock. Electric-eye registration of printed stock is available by means of accessory equipment. **(A-113)**

CONTINUED ON PAGE 214

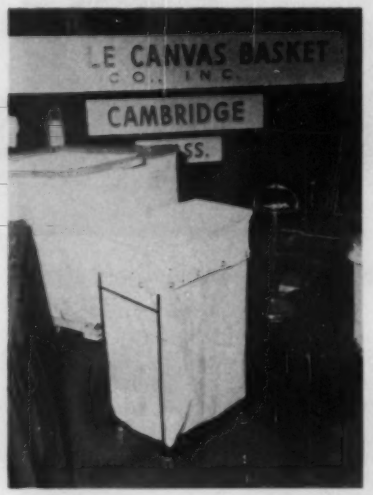
MAINTENANCE AND ENGINEERING



Air-Conditioning System

A new type of air-conditioning system was shown by Carrier Corp., Syracuse, N. Y. Described as a high-velocity, unitary humidifying or dehumidifying device called the Rotaspray Weathermaker, it is said to operate at velocities from three to four times those of conventional air washers.

The unit eliminates the need for apparatus rooms, towers, or penthouses. Its compact design simplifies relocation in the mill to meet changes in production-machinery requirements. The units may be suspended from the ceiling, installed outside on the roof, or hung from the wall. **(A-114)**



Waste Collector

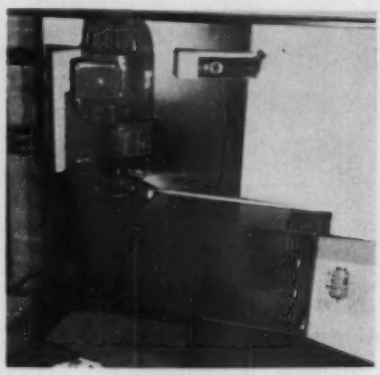
A portable spring-type bag holder for collecting waste at the cutting table was shown by Steele Canvas Basket Co., Cambridge, Mass. It can be used with a waste dealer's burlap bag, in which case the entire bag is removed when full and an empty one substituted. Sizes are 18x12x36 ins. high or 18x18x36 ins. high. Various types of bags can be used. **(A-116)**

Plastic Coating Material

A plastic coating for bobbin carriers, take-up tubes, hosiery chutes, guides, and other pieces of equipment that require a smooth surface was exhibited by Engineered Plastics, Inc., Gibsonville, N. C. **(A-117)**

Chairs, Stools

Adjustable chairs and stools suitable for operations such as cutting, sewing or packaging were shown by Adjusto Equipment Co., Bowling Green, Ohio. A patented automatic adjusting mechanism works on the same principle as the bicycle coaster brake: when pressure is applied it grips. **(A-118)**



Variable-Speed Drive

A redesigned V. S. Jr. all-electric variable-speed drive was shown by Reliance Electric & Engineering Co., Cleveland, Ohio. It has an increased horsepower range from ¾ to 4 and a printed circuit design. **(A-119)**

Needle Oils

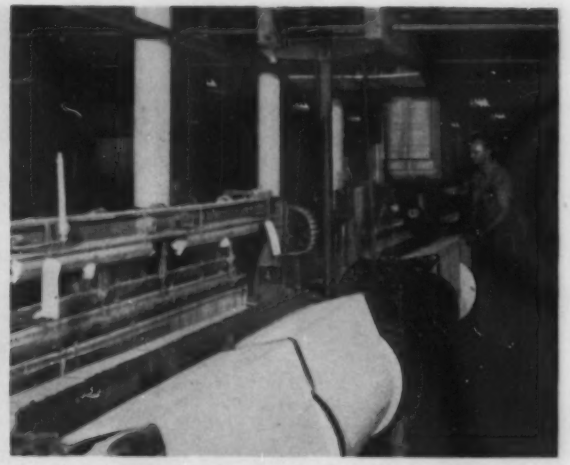
Two new grades of needle oils were shown by Shell Oil Co., New York, N. Y. The Circular Knit Oil #23 has a fairly heavy viscosity for coarse-gauge machines. One with still heavier viscosity for coarser work is Needle Oil #27. The oils contain a rust inhibitor. **(A-115)**

Speed-Control Device

A device for controlling infinitely variable speed was shown by Revco, Inc., Minneapolis, Minn. It allows for an instant change of speed whether running or not and produces any speed from zero to one-quarter of motor speed. **(A-116)**

For more information, circle the A-number on Reader-Service post card.

WIDE SHEETING is made on Draper L-Model looms. Peppermint-striped and gray sheeting is mixed on looms side by side.



JACQUARD ATTACHMENTS are used on a small group of looms. Customers' names are woven into some sheets with the jacquards.

For New Sales Spark—

This Mill Weaves Candy-Stripe SHEETING

• New peppermint stripes have enlivened the sales of a mill weaving wide sheeting. The lively stripes also break the monotony of all-gray fabrics for greater worker interest.

THE RECENT ADDITION of peppermint stripes to its line of standard sheeting has given new sales life to the wide sheeting and pillowcase goods woven at a sheeting mill. There's also more interest in weaving where the scattered striped warps and fabrics in the weave room enliven the former solid blanket of all gray goods.

Good merchandising of these attractive sheets has struck a sales spark, especially in the Midwestern area. Now a large portion of the looms are banging out the fabric.

Candy Stripe Is Muslin

The Type-130 carded muslin sheets with peppermint stripes are made in four colors: blue, green, pink, and yellow. The basic widths are 61, 77, 89, and 92 ins. Warp yarn is 22.70s, and filling is 23s. The construction is 64x64.

The two main gray-goods fabrics woven are 88x90 combed percales and 68x72 muslins. One other new gray sheeting that's selling well is 64x64.

The Type-180 88x90 combed percale sheeting is made in several widths: 54, 61, 77, 89, 92, and 99 ins. Warp yarn is 32s; filling is 23s.

The Type-140 68x72 muslin is made in the same widths as the percale sheeting; and in addition, 110- and 120-in. widths are woven. Warp yarn is 20.75; filling is 23s.

There are two weave rooms at the mill with a total of 643 looms. All looms are Draper, and models are L, D, and E.

Widths and speeds of most looms are: 54-in., 135 ppm; 64-in., 127 ppm; 72-in., 119 ppm; 81-in., 116 ppm; 90-in., 112 ppm; and 100-in., 102 ppm.

Standard Equipment Is Used

The looms have not been altered basically and are equipped pretty much with the same motions supplied by the loom manufacturer.

The looms are individually driven by ¾- and 1-hp. motors. The motors are about equally divided between ball bearing and sleeve bearing.

Most looms have two-harness roll-top cam harness motions. One small group of looms is equipped with jacquards.

Some of the looms have Bartlett let-offs; others have Roper. Bobbin length is 8¾ ins. Conventional slotted checkstraps are used on all looms.

Weave-room efficiency averages 92%. Second-quality cloth averages 1¼%.

Weave Room Is Kept Clean

The weave rooms have air-changing systems installed by Bahnson. Adequate humidity is furnished by the air ducts, and no auxiliary atomizers are used. Machine-shop employees service the systems.

One weave room has wood floors, and the other has concrete floors. Floors are maintained by shop em-

CONTINUED ON PAGE 204

WINDING the filling yarn correctly on the bobbin is necessary to eliminate mispicks.

What To Look for To ELIMINATE MISPICKS

• Mispicks in woolen, worsted, and other fabrics are caused in numerous ways. The best method to keep these defects to a minimum is to systematically check any condition that can cause mispicks. Here are some check points—

By **EUGENE P. SCHREMP,** Consulting Editor, TEXTILE WORLD

A MISPICK is the absence of one or more picks of filling all the way across the fabric. If the absence of filling is intermittent or only part way across the fabric, the imperfection is usually referred to as a broken pick.

Mispicks or broken picks may be caused by a number of conditions. Looms are equipped with filling stop motions, but these devices are not infallible. Weak or tender filling that breaks excessively in weaving will increase the chances of mispicks. With this type of filling, extreme caution must be observed in weaving.

Filling-winding machines should be checked. All yarn guides should be inspected and replaced if there are any grooves that may cut the yarn. All broken or cracked porcelain guides must be replaced. Winder tenders should be instructed to keep knots on the outside of the bobbin and to keep knots to a minimum. A knot close to the bare wood of the bobbin is almost certain to cause the filling to break in weaving.

Bobbins wound so large that there is no clearance between the wall of the shuttle will cause trouble by excessive filling breakage. A bobbin that is too small will cause a loss in winder production and excessive waste of filling yarn.

The best method is to determine the maximum diameter and supply a gauge of this size to each operator. Winder tenders should be instructed to check the bobbins and report at once if any bobbins are being wound over or under the size of this gauge.

Don't Use Old, Rough Bobbins

Filling reserve on the bobbins used in automatic looms is also very important in eliminating broken picks. A reserve of 4½ picks is necessary to prevent the filling from running out after a delayed induction of the filling feeler.

When the filling runs out at a transfer, there is a possibility that there will be a short broken pick at the magazine side at the time of a filling change. Winder operators should check each spindle at the start of the shift to make certain that the proper reserve is being wound. Insufficient reserve may also cause drag-ins at the time of transfer.

Loom bobbins should be inspected. Bobbins that are splintered or rough should be discarded. Enameled or lacquered bobbins are usually used in weaving fabrics with fine filling. Using old, rough, or chipped bobbins is false economy.

Shuttles should be inspected at the loom. The proper type of shuttle eye should be used. The eye of the shuttle should be large enough to allow a knot to pass through without breaking. If spring tension eyes are used, they should be adjusted so that knots will pass through the tension pads.

Shuttle spring clips must be adjusted to hold the bobbins straight. A bobbin out of line in the shuttle is sure to cause excessive filling breaks.

Settings Should Not Be Changed

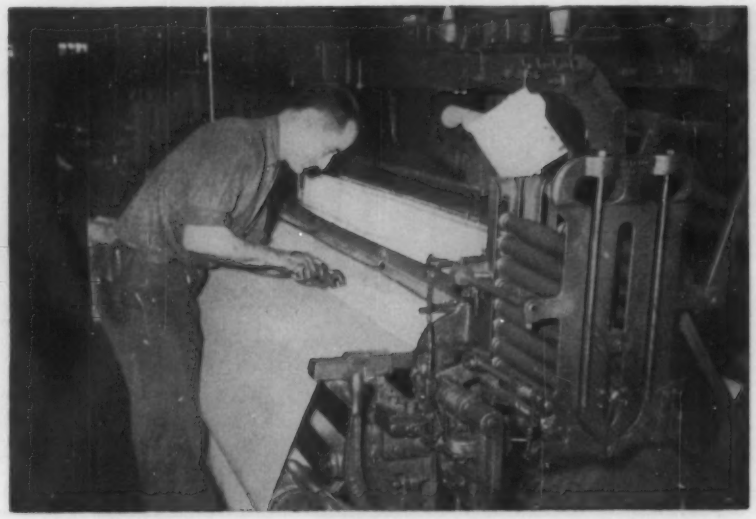
The filling-stop-motion well should be cleaned of waste at the start of each shift. If waste is allowed to accumulate in the well, the feeler wires will be held up and the stop motion will not operate properly.

Some mills make a practice of having someone clean out the stop-motion wells during the week-end shutdown and leave the lint on the cloth. This practice will remind the weavers when they come back to work after the week end of the importance of this simple operation.

Batteryhands should check the bobbins and pull off any twisted or crossed yarn. It is also important to keep the filling ends straight on the thread guide.

The filling stop motion should be kept in perfect condition. When the warp is out, the stop motion should be checked and any worn parts replaced.

Loomfixers should be instructed to replace worn parts instead of making the common mistake of changing the recommended settings to compensate for wear. The parts that normally wear are not expensive, and it is false economy not to replace them. Management should keep the stock room well supplied with connectors, daggers, dagger holders, knock-off levers, shields, and rivets.



WEAVERS should remove any waste that has accumulated under the filling fork.

Study the Defect To Find Cause

Some of the newer looms are equipped with a torsion spring that is applied to the feeler-wire shaft. With this type of spring, it is not necessary to go under the loom to change the spring tension.

This spring adjustment is very important. There must be enough spring pressure to insure that the dagger stays in contact with the cam, engages the knock-off lever, and stops the loom when there is no filling under the feeler wires.

Older-type stop motions may easily be converted to this torsion-type spring.

Brake and shipper handles should be adjusted so that they knock off easily. If the brake and shipper handles are hard to knock off when the filling breaks, there is a possibility that the knock-off lever on the brake tube will slip and render the filling stop motion inactive.

The cause of a mispick can usually be determined by studying the defect in the fabric or at the loom. If the mispick extends all the way across the fabric, there is a good possibility that it was caused either by a careless weaver or by the stop motion being out of order. This mispick may have been caused by not finding the right pick when the filling broke or by locking the head motion on the wrong pick.

Weavers Sometimes Cause Mispicks

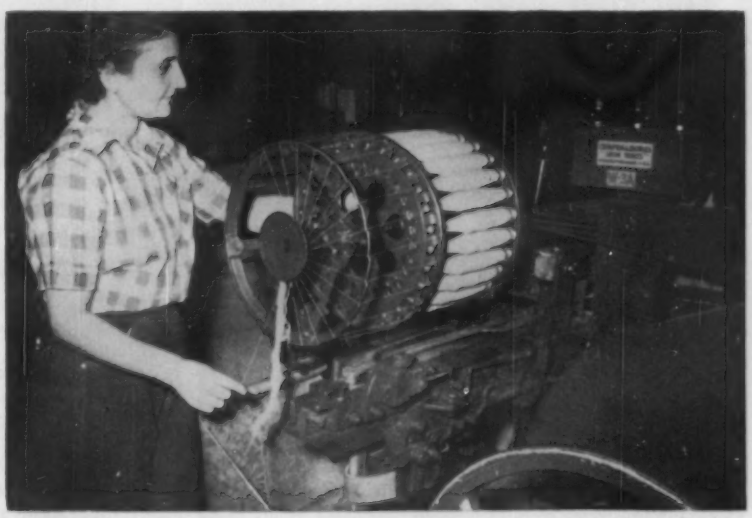
Mispicks may also be made by the weaver starting an automatic loom with the shuttle in the magazine side one pick at a time. This is caused by the fact that if the filling is broken or cut by the temple blade, the stop motion is inactive due to the weaver knocking the shipper handle off and then starting up again. This condition is usually found when the weavers are not familiar with automatic looms.

Short broken picks at the right side of the fabric at a filling change indicate that the filling is running out because of insufficient reserve or the filling feeler is not adjusted properly. Short broken picks may also be caused by lack of proper spring tension on the filling fork.

Mispicks are sometimes made when the filling stop motion is in perfect order. This may be caused by the filling breaking after the lay passes the point where the dagger should contact the knock-off arm.

This mispick is usually caused by filling catching on something and breaking as the shuttle enters the box. A broken pick of this sort is easy to determine as there will be a loose end of filling at each end of the broken pick.

To correct this type of broken pick, it is necessary to find what is causing the filling to break. Worn binders or mouth pieces, shuttles with insufficient filling grooves, bad filling bobbins, and shuttles being thrown crooked are some of the conditions that may cause this type of broken picks.



BATTERIES should be kept clean with ends straight on the guide and loose ends removed.

EMPTY CARRIERS move down the front conveyor to be filled from the stock racks. Full carriers are pushed to the live conveyor against the wall.

Munsingwear's Conveyor System Solves a PACKAGING PROBLEM

Problem—To assemble, pack, and seal 2,500 cartons of different sizes and shapes daily with a minimum of operating personnel

Solution—A 2,000-ft. conveyor system that moves the finished goods smoothly through all operations in a few hours

MUNSINGWEAR, INC., MINNEAPOLIS, MINN., produces a wide variety of underwear, outerwear, hosiery, and sleeping wear. Shipping this wide variety of merchandise on time created a king-size problem, and traffic jams and bottlenecks were a daily occurrence until a new conveyor system that keeps the goods rolling was installed.

Engineered by Rapids-Standard Co., Inc., the conveyor system is about 2,000 ft. long, and covers five floors. The two top floors covered by the system are stock rooms, packing is done on the third floor, and the bottom floor is the shipping section.

CHECKING STATION has split tracks to allow two checkers to work. The two tracks unite to send the completed orders to the packing section.

Fifteen power belts and two 40-ft. lengths of live-roller conveyors supplement the gravity-roller conveyor to keep the goods flowing smoothly. The roller conveyor declines 2½ ins. every 10 ft. Skate wheels are used to handle packages that are too light to move roller conveyors.

To prevent bottlenecks at certain positions in the system, Micro switches on the rails are stationed in pairs about 4 ft. apart after each power belt. Because the box carriers are 38 ins. long, a conveyor keeps the belt moving if only one switch is pressed down. If both switches are pressed down, the belt stops and no more carriers or cartons are fed to that position.

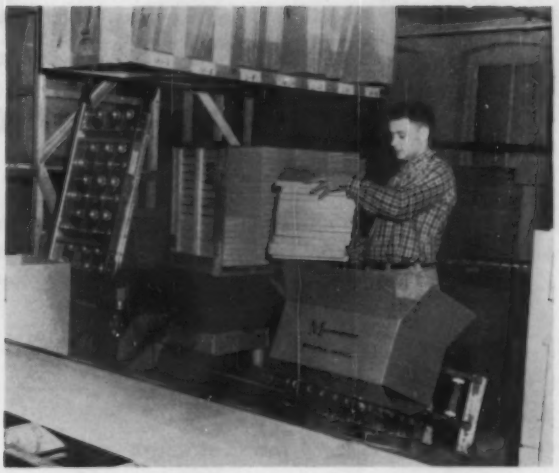
How the System Works

Orders arrive in the stock rooms through a vacuum tube. The orders are sorted and distributed to five order-filling stations. Stock racks containing men's and boys' garments are alongside a 220-ft. dual conveyor.

Orders are taken from the stock racks and placed on carriers that roll along the roller-type gravity conveyor. A carrier is a wooden box with an open front, and it never leaves the conveyor track. As the carrier travels down the conveyor, a stockman checks the order and fills it from the racks. Parts of the order that cannot be filled are circled on the order form.

When the order is complete, the order sheet is folded and the carrier is pushed to a live conveyor that runs behind the roller conveyor. This conveyor moves the

SCALES are on the conveyor system; and the goods are sorted out according to whether they are to be shipped by freight, express, or parcel post.



PACKING STATION is a complete unit where cartons of different sizes are kept. Full cartons go on the lower conveyor; empty carriers are returned on the higher conveyor.

full carriers to a checking station where the conveyor line is split to allow two checkers to inspect the orders.

These men check the number of dozen, size, style, and box types. If shortages other than those indicated show up, the checkers communicate with the stockman through an amplifier system.

After the checking station, the two tracks merge and deliver the carriers to the routing station where each carrier is weighed for classification. A man at the scales determines whether the goods should travel by freight, parcel post, or express. Goods for parcel post are switched to an upper track, while the other carriers go to the freight and express packing stations.

There are four freight and five parcel-post packing stations, and a button is pressed when the packer requires another carrier. A live rail brings this carrier to the packing station. Knocked-down cartons are stored over the packer's station, and suitable sizes are selected for the boxes of merchandise.

A liner is placed in the carton when it has been made up, and the goods are packed while the carton sits on a slanted roller-base stand. Because one order may require several cartons, the cartons are marked one of two, or one of three. The label is removed from the order form and stuck on the package; the order form is slipped in the carton.

When packed, the carton is pushed on a live conveyor that transports the cartons to the shipping scales. After weighing, the cartons are sorted on tracks that serve as a

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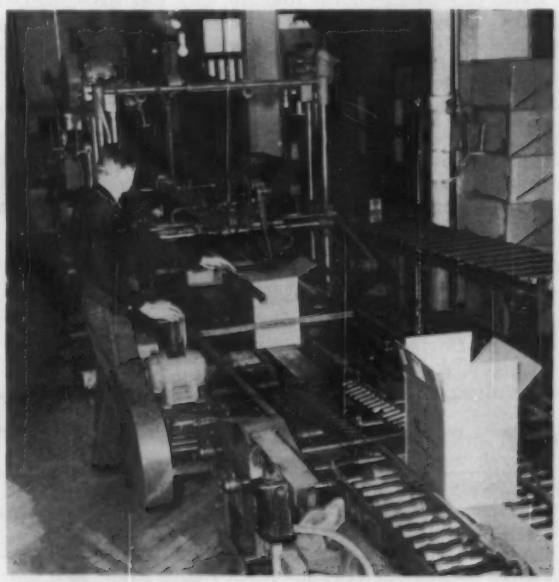
CARTONS are weighed and sorted out in various sizes and stored on the tracks until enough cartons accumulate to put them through the sealing machine.



SEALING MACHINE automatically glues the open ends of the cartons as they are delivered from the storage area. The operator adjusts the machine to the carton size.

Determine FABRIC STRENGTH By Comparing Fabrics

You can determine the approximate strength of a fabric before it is woven by comparing it with other fabrics of known strength. Here are several formulas and tables you can use to estimate—

- **Warp strength**
- **Filling strength**
- **Total fabric strength**

By B. L. WHITTIER, School of Textiles, North Carolina State College

THE STRENGTH OF A FABRIC is one of the characteristics a buyer uses to judge its value. In establishing the strength factor, the following characteristics are important: (1) weight, (2) fiber content, (3) weave formation, (4) cover factors, and (5) yarn quality and type.

The strength of a fabric has a definite relationship to the weight of the material in the fabric, and is the basis of this article.

The strength of fabrics is expressed in pounds, and fabric weight is expressed in ounces. The basic equation in determining such a strength factor is:

$$\text{Fabric strength factor} = \frac{\text{pounds strength}}{\text{ounces of material}}$$

The strength of a fabric may be expressed several ways: (1) unidirectional strength, (2) tear strength, (3) burst strength, (4) impact strength, or (5) some other type.

How To Determine Strength Factor

Tensile strength is the most widely accepted test used to maintain standards by quality-control methods and to compare one fabric with another. Therefore there is a need for a factor based on the stress necessary to rupture a fabric in a unidirectional test. The equation is:

$$\text{Fabric strength factor} = \frac{\text{pounds tensile strength}}{\text{ounces of material}}$$

A comparison of the strength of different fabrics, or rating an individual fabric, by strength factor is difficult if a common weight basis is not used. Therefore cloth tested is figured in weight per square yard; or in mill terms, the weight of 1 yd. of cloth 36 ins. wide.

The weight of fabrics and the component parts of fabrics can be converted easily to this common basis by direct ratio. For instance, a fabric 27 ins. wide, weighing 3 oz. per yd., with 65% of its weight in the warp and 35% in the filling, can be converted to a square-yard basis by this formula:

$$\text{Ounces per square yard} = \frac{\text{weight in ounces} \times 36}{\text{measured width}}$$

The fabric in the example above is calculated by the formula in this way:

$$\frac{3 \times 0.65 \times 36}{27} = 2.60 \text{ oz. of warp per square yard}$$

$$\frac{3 \times 0.35 \times 36}{27} = 1.40 \text{ oz. of filling per square yard}$$

The woven fabric, including both the warp and filling, weighs 4 oz. per sq. yd.

Based on these facts, the equation becomes:

$$\text{Fabric strength factor} = \frac{\text{pounds tensile strength}}{\text{ounces of material per square yard}}$$

Another way of expressing the equation is:

Fabric strength factor = pounds or ounces of material in 1 sq. yd. of fabric

Table 1—Formula Determines Strength Factor

	Tensile strength in lbs.		Oz. per sq. yd.		Fabric strength factor
Warp 65%	80	÷	2.60	=	30.8
Filling 35%	40	÷	1.40	=	28.6
Fabric	120	÷	4.00	=	30

STRENGTH FACTOR is shown for warp and filling strength and total strength of the fabric in relation to its weight.

Table 2—Formula Calculates Tensile Strength

	Oz. per sq. yd.		Fabric strength factor		Estimated tensile strength in lbs.
Warp 60%	4.8	×	30.8	=	148
Filling 40%	3.2	×	28.6	=	92
Fabric	8	×	30	=	240

TENSILE STRENGTH of a fabric varies substantially in direct proportion to the weight of the fabric.

This equation can be transposed to determine the estimated tensile strength when the strength factor and weight per square yard are known. Then the equation is:

Pounds of tensile strength = strength factor x the ounces per square yard

Testing Methods Vary in Results

There are several methods for testing woven fabrics to determine tensile strength. The results vary considerably because the stress necessary to rupture a fabric depends on several factors: (1) the width of the fabric gripped by the tester jaws, (2) the relationship of the width gripped to the width of the jaws, (3) the initial distance between the jaws, and (4) the speed of separation of the jaws.

The two most common methods for determining tensile strength in the U. S. are: (1) the ASTM grab method, also known as the 1x1x3 method; and (2) the ASTM raveled-strip method.

Both of these methods grip 1 in. of fabric, but in a different way; and in many structures of cloth, the results of the two methods show a marked difference. The marked results are particularly noticeable in fabrics with high crimp.

Grab Method for Standard Testing

For instance, in a test of warp strength for a fabric with 25% warp crimp, the strength factor by the strip method might be 30% lower than by the grab method. But in a test of filling with 3% crimp, the strength factor by the strip method might be only 10% lower than by the grab method.

Therefore it is important to know the test method when tensile strength is discussed or when one fabric is compared with others.

The grab method, conducted in standard atmospheric conditions, as prescribed by ASTM, is probably the most commonly used commercial test in the U. S. Furthermore, many testing people believe that it gives a better relationship with actual service requirements and a closer correlation with weight than the strip method.

Therefore, all further examples of strength factor in this article are made by the grab method.

Strength Includes Three Factors

In determining the strength factor of a fabric, tests may be made for the:

1. Warp strength
2. Filling strength
3. Total strength of the fabric in relation to its weight

If the fabric described earlier in the article, weighing 4 oz. per sq. yd., with 65% warp weight and 35% filling weight, has a tensile strength of 80 lbs. for the warp and 40 lbs. for the filling, the strength factor is determined as shown in the formulas in Table 1.

The tensile strength of a fabric varies substantially in direct proportion to the weight of material in the fabric if other characteristics remain the same.

If the fiber content, weave formation, fabric cover factors, and yarn types are not changed, there is a direct relationship between the strength and the weight of a fabric. Therefore an 8-oz. fabric should have twice the strength of a similar 4-oz. fabric.

You Can Compare Similar Fabrics

Consequently, since we know the fabric strength factors in the fabric described above, we can estimate closely the tensile strength of an 8-oz. fabric similar in all other characteristics but with 60% of the weight in the warp, as shown in Table 2.

A great deal of knowledge of fabrics is required to predict tensile strength accurately because any change in fabric characteristics affects the strength factor.

For fabrics made with the same fibers, there is a direct relationship between fabric cover factors and tensile strength. This relationship exists only if the ratio of warp-to-filling cover factor remains constant and the yarns remain constant.

Consequently a close estimate of the expected strength factor for various types of fabrics can be made by a study of the known requirements and standards established.

Table 3—Tensile Strength Is Compared

Fabric No.	Minimum Weight per sq. yd. in oz.	Minimum tensile strength grab method in lbs.	Strength factor
1. Carded cotton 80x80 print cloth	3.60	90	25
2. Carded cotton 64x64 sheeting	4.50	110	24.5
3. Carded cotton 72x60 drill	7.50	205	27.5
4. Carded cotton 46x30 duck	14.35	405	28
5. Combed cotton 106x52 mercerized poplin	5.00	190	38
6. Combed cotton 116x56 mercerized twill	7.90	300	38
7. Spun nylon 44x26 duck	13.90	1,070	80
8. Filament nylon 180x76 oxford	3.00	355	118

COMPARATIVE tensile-strength requirements used by the Quartermaster Corp. of the U. S. Army may be 10% below the average.

Examples of Comparative Strength

A good illustration in comparative tensile-strength requirements is shown in Table 3 used by the Quartermaster Corps of the U. S. Army. The table shows the minimum requirements for tensile strength, which may be as low as 10% below the average of the particular fabric.

Fabrics No. 1 and 2 are similar in texture or degree of tightness, and both are made of single yarn. Many carded cotton fabrics have strength comparable with these fabrics and might have an average strength factor of 28.

Fabrics No. 3 and 4 are carded fabrics of firmer construction; a strength factor of 30 to 32 is average for them.

The highest strength factors possible in cotton fabrics are probably present in Fabrics No. 5 and 6. The strength comes from (1) combed ply yarn made from long-staple cotton and (2) a high warp cover factor.

The great strength of high-tenacity synthetics yarns is demonstrated in Fabrics No. 7 and 8. In this instance, the spun-nylon fabric has greater strength than the filament-nylon construction.

Fabrics of filament-nylon yarn have greater strength than spun-nylon fabrics of the same construction.

More spindles are concentrated in any given floor space with Platt's exclusive frame design.

Multiple reorders confirm Platt M·S·2 Frames produce a superior roving

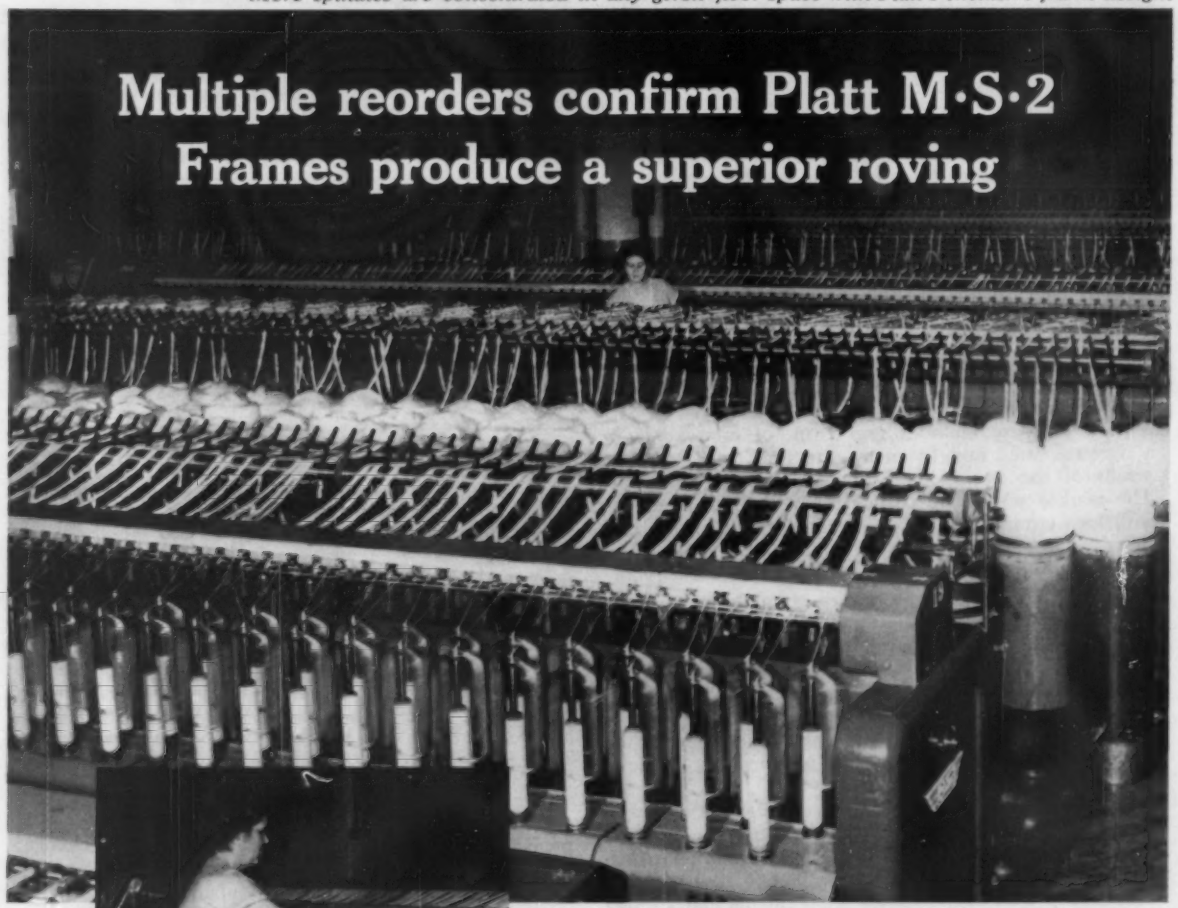


PHOTO COURTESY OF AMERICAN THREAD COMPANY

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The fourth installation in three years expresses the high regard this major American mill has for Platt Roving Frames. These streamlined frames produce an even, non-stretched roving of superior quality. Vibration and sound have been cut to a minimum. This smoother operation increases the frame's life. The more even roving means fewer ends down in spinning. Before purchasing any new frames we invite you to write for information on these efficient frames manufactured by the world's largest maker of textile machinery.

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SHUTTLE-INSPECTION System Reduces Shuttle Cost

• Your loomfixers can take part in a shuttle-inspection system that reduces shuttle cost after only a short period of operation. Other benefits are better cloth and higher loom efficiency. Here's how the system works.

By ERNEST R. BECKNER

TO REDUCE YOUR SHUTTLE COST, you should set up an inspection program and have all shuttles inspected once a week with a checklist.

Give your loomfixers a part in planning the inspection so that they won't think you are spying on them or policing them. The inspection will help them and is not a disciplinary measure.

Usually loomfixers don't have time to run their sections and inspect shuttles too. Their attention isn't called to a shuttle until it starts giving trouble or makes second-quality cloth. Therefore you will need a special employee to make the inspection.

Shuttle inspection must be methodical to be effective. The following checklist is used on Draper XD looms, 60 ins. wide, running at 152 ppm., and 90% efficiency; and on Crompton & Knowles S-6 looms, 52 ins. wide, running at 172 ppm., and 95% efficiency.

The checklist was developed and used with a Tension-Rite instrument. Along with shuttle inspection, the filling tension is set to a standard tension, as determined by the style of cloth being woven. The following checklist includes the details of inspection.

Inspect the Spring Clip

1. Loose or weak spring. Grasp the shuttle firmly around the back end with the fingers overlapping the top of the spring. Move the tip of the bobbin up and down, and judge whether the bobbin butt is held firmly enough and whether the top section of the clip moves.

2. Broken spring tip. Sometimes part of one prong of a clip is broken off during bobbin transfers. If the clip holds the bobbin only fairly securely, replace the clip.

3. Loose screw. Usually a loose screw is surrounded by loose rust particles working out around the screw head. The loose screw can cause a bad break-out.

4. Bobbin out of alignment. Judge whether the bobbin tip is too high or too low or too close to either the front or back wall of the shuttle.

Inspect the Shuttle Eye

1. Tip too high or too low. If the tip is too high, it may snag warp ends or hit the shuttle guard. If it's too low, it will not thread up properly.

2. Loose bolt. Grasp the shuttle firmly in one hand; and with the other hand, try to move the eye up and down. Also examine both the bolt head and the nut. Many reeds and box binders are ruined with loose bolts.

3. Eye cut by yarn. If brass eyes are used, the eye is sometimes cut and must be filed smooth.

4. Cut tension pads. Tension pads are hardened, but they sometimes become cut or rough. Lift the tip of the bobbin out of the way, and place the filling in its normal position between the pads. Pull the filling up slowly; if it hangs and suddenly turns loose, the pads are cut and must be replaced.

5. Lost springs. The tension-spring pads sometimes break and fall out. At other times, the Allen adjusting setscrews vibrate loose and let the springs fall out. The loose pads give too little tension and vibrate at shuttle picking and checking to bruise the yarn.

6. Cut pins. The shuttle pins at the front of the eye are often cut by the yarn. Check for cut pins by pulling the yarn slowly up and down them. Replace cut pins.

7. Cut wood. Filling sometimes rise over a portion of the wood surface and of course soon cuts it. The cut surface must be smoothed.

8. Cut fibre. Filling usually rides over the fibre as it leaves the last pin at the shuttle eye and comes in parallel position with the front wall of the shuttle. The cut place that results must be smoothed and polished.

Some shuttles have a hardened metal plate at this point. Check to be sure the plate is smooth and that the screw slot is not rough.

Inspect the Shuttle Front

1. Loose cutter plate (C&K loom). This plate sometimes comes loose and the fibre works loose. The results are a break-out or ineffective cutting of filling tails at the transfer. If the plate cannot be tightened, discard the shuttle.

2. Fibre hit by thread cutter. The thread cutter may be adjusted too high or too low. The shuttle may bounce or rise in the shuttle box, which lets the cutter roughen the fibre.

The condition must be corrected, and the shuttle fibre must be smoothed or it will snag the yarn.

3. Rough shuttle. Rough front box plates and dressing from the leather on front box plates roughen the shuttle. Sand the shuttle perfectly smooth, and polish it with an oil-and-shellac mixture.

4. Worn groove. Fixers often polish a rough shuttle front without removing the cause. Therefore the front of the shuttle is sanded so often that no groove is left. This condition results in pinched filling.

Inspect the Shuttle Top

1. Shuttle rising in the box. A rising shuttle makes rough places on the top edge of both walls of the shuttle. A high-thrown shuttle makes glazed places on the shuttle where the front top of the shuttle strikes the box top, or the shuttle may be bruised about halfway between the shuttle spur and the top.

2. Shuttle hits shuttle guard. A high-thrown shuttle may be caused by improper picking or the warp shed too high over the race plate.

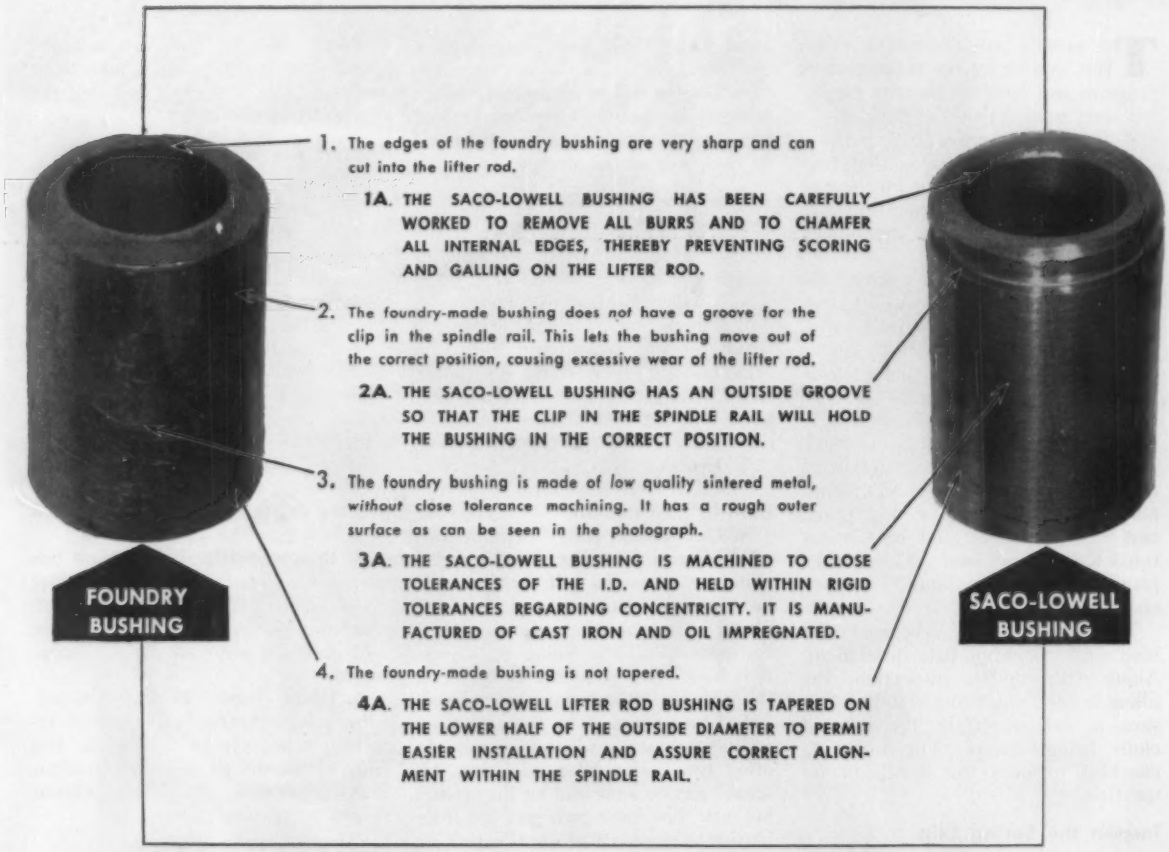
The shuttle guard may also be set

CONTINUED ON PAGE 200

WHICH IS THE BEST MONEY VALUE?

ALL lifter rod bushings are NOT the same!

TROUBLE-SHOOTING FOR A MILL, WE COMPARED THE "FOUNDRY" LIFTER ROD BUSHING IN USE WITH THE GENUINE SACO-LOWELL REPLACEMENT PART. THE FOLLOWING IMPORTANT DIFFERENCES WERE DISCOVERED:


1. The edges of the foundry bushing are very sharp and can cut into the lifter rod.
1A. THE SACO-LOWELL BUSHING HAS BEEN CAREFULLY WORKED TO REMOVE ALL BURRS AND TO CHAMFER ALL INTERNAL EDGES, THEREBY PREVENTING SCORING AND GALLING ON THE LIFTER ROD.
2. The foundry-made bushing does *not* have a groove for the clip in the spindle rail. This lets the bushing move out of the correct position, causing excessive wear of the lifter rod.
2A. THE SACO-LOWELL BUSHING HAS AN OUTSIDE GROOVE SO THAT THE CLIP IN THE SPINDLE RAIL WILL HOLD THE BUSHING IN THE CORRECT POSITION.
3. The foundry bushing is made of *low* quality sintered metal, *without* close tolerance machining. It has a rough outer surface as can be seen in the photograph.
3A. THE SACO-LOWELL BUSHING IS MACHINED TO CLOSE TOLERANCES OF THE I.D. AND HELD WITHIN RIGID TOLERANCES REGARDING CONCENTRICITY. IT IS MANUFACTURED OF CAST IRON AND OIL IMPREGNATED.
4. The foundry-made bushing is not tapered.
4A. THE SACO-LOWELL LIFTER ROD BUSHING IS TAPERED ON THE LOWER HALF OF THE OUTSIDE DIAMETER TO PERMIT EASIER INSTALLATION AND ASSURE CORRECT ALIGNMENT WITHIN THE SPINDLE RAIL.
FOUNDRY BUSHING
SACO-LOWELL BUSHING

Saco-Lowell bushings were found to be superior in quality, workmanship and design. In lifter rod bushings — as in all Replacement Parts — Saco-Lowell is your BEST MONEY VALUE. To keep quality and production high, use Genuine Saco-Lowell Replacement Parts — They last longer and perform better.

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← For more data, write this page number on Reader-Service card.

A Supervisor Needs an Understudy

• Many supervisors shoulder all the details of running their jobs rather than delegating authority to an understudy or assistant. But the mark of a really good supervisor is not how much his department depends upon him but how well it can operate without him.

By **WILMER C. WESTBROOK,** Assistant Editor, TEXTILE WORLD

A large textile mill lost two overseers at the same time. Just one week before Rupert Bascom was to retire as overseer of the card room, the weave-room overseer, Dewey Monck, had a heart attack. Being eligible for retirement under the company's pension plan, Dewey retired immediately on his doctor's advice.

There are always some change and confusion all down the line when department heads are changed. Some changes were called for in this case. But the repercussions following the loss of their overseers affected the two departments in entirely different ways.

Although Rupert had known he was going to retire, he had made no definite plans for the department. He had been overseer for 30 years and had done an outstanding job. But his was a one-man rule. He had made all the plans and inaugurated all the changes, and he hadn't delegated any more authority to his subordinates than was absolutely necessary.

One Supervisor Was a Dictator

Rupert kept all written records and reports to a bare minimum. He had an excellent memory and kept operating details and data in his head. Because he had the knowledge of long familiarity with his department, he was almost a walking encyclopedia of carding in that particular mill.

But he had little patience with those who disagreed with him. He gave orders and took it for granted that they would be carried out without question. He was against change in any form and would install new machinery or equipment only when management insisted. In short, Rupert Bascom was a dictator, the absolute ruler of his department.

His successor was Jason Noles, who had been assistant overseer for a number of years. Jason had a lot of ideas for improving the department but under Rupert he hadn't been allowed to try any of them.

Now, as head of the department, Jason began to make some sweeping changes. Some were things that should have been done years before. Others were untried ideas and plans that were not completely thought out. Jason lacked the experience, skill, and prestige of his former boss. He couldn't obtain the unquestioning obedience of subordinates and was soon floundering in a maze of production and personnel emergencies.

Things were far different in the weave room. Although Dewey Monck had expected to remain on the job for several more years, he had a setup that made him expendable. In fact, he had developed a system in which every key man in his department had an understudy who could take over his duties on a moment's notice.

Everyone in the department regretted the loss of their overseer. Nobody was sorrier to see him retire than was Jim Cannon, the assistant overseer of weaving. But Jim had no misgivings or doubts about the job.

The Other Supervisor Was Democratic

He had been taken into the confidence of his overseer, had been asked to state an opinion on all matters affecting the department, and had been allowed to try out ideas of his own. This democratic spirit had extended on down through the second hands to the employee level. Everyone in the department felt free to offer his suggestions or talk over any problems with his supervisors.

There was no dissension and no confusion in the weaving department when Dewey had to retire with no advance notice. The assistant was promoted to overseer, a second hand was moved up to fill the job of assistant, a loomfixer became second hand, and his section was taken over by a trainee, a former weaver.

The retiring overseer had had the foresight to keep adequate records. His rules, formulas, departmental policies, training schedules, and other operational data were all written and available for the use of all concerned. There were no sudden changes, because no ideas or plans had been bottled up. There was business as usual in the weave room.

Delegate Authority

Many times the management of a mill will be caught with a job vacancy and no one qualified to fill it. Such a condition is usually caused by the reluctance of a supervisor to adequately train an understudy or assistant. A lot of old-timers have accumulated their knowledge the hard way and don't want to pass it on.

They have worked their way up to a position of authority and responsibility and don't want to delegate any part of the job to an assistant. Many of them are afraid

CONTINUED ON PAGE 226

10,000 LBS. OF POWER

for even ordinary lubrication jobs!

FAST, EFFICIENT HEAVY-DUTY
ALEMITE HAND GUNS

Linkage is heavy steel for true piston alignment!

This rugged Alemite lever-type gun is packed with power and superior features for super performance in industrial lubrication! Develops 10,000 lbs. pressure . . . more than enough for ordinary lubrication jobs—with plenty of reserve power for "tight" bearings! Handles all regular pressure gun greases. Long-operating handle for maximum leverage. Loader fitting permits fast, clean filling (or gun may be filled by suction). Capacity, 1 lb., outlet, ⅛" p.t.

Follower rod disappears after filling—for ease of handling!

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Loader fitting for fast clean filling with loader pump. No mess—no waste—no air pockets!

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Loom Pick Motion

An electromechanical pick motion for large looms used in weaving felt and carpets has been developed by Waldorf Instrument Co. Div., F. C. Huyck & Sons, Huntington Station, N. Y.

The drive has a separate ¾-hp. motor mounted under the loom at each end. Each motor drives a flywheel that stores energy for picking. An electromagnetic clutch mounted on the flywheel couples it to the lug strap for the pick and uncouples it when the pick is completed.

A rotary switch times and actuates the pick motion. It is possible to select the most desirable crank angle for the pick while the loom is in motion by simply turning a dial on the switch.

By means of two rheostats, it is also possible to turn dials to increase or decrease the voltage applied to the clutch magnet and increase or decrease the picking power.

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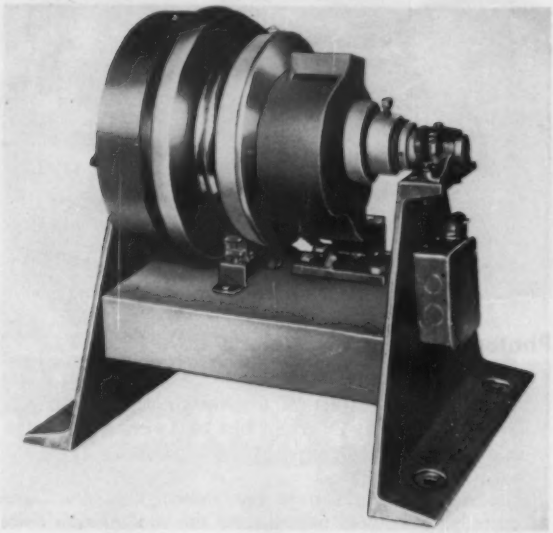

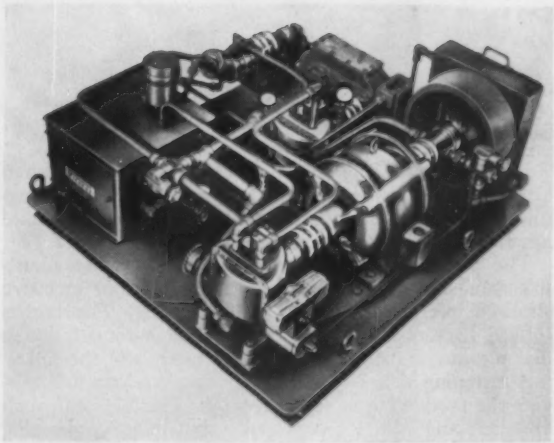

Slasher Drive

A hydraulic slasher drive that is assembled in package form and can be installed in one 8-hr. shift has been announced by Vickers, Inc., 1400 Oakman Blvd., Detroit 32, Mich.

The drive gives even tension control at all speeds with smooth acceleration and deceleration from zero to maximum. It has selective creep speeds that make it possible to doff the beams on certain types of yarns without stopping the slasher.

A single 7½-hp., 1,200-rpm. standard a.c.-electric motor will operate the average slasher at speeds up to 80 yds. per min. with the Vickers drive. The drive is completely sealed and self-lubricated.

Circle T-2 on Reader-Service Card

Twister Conversion Parts

Model-10 ring twisters with 8- and 9-in. traverse can be adapted to make 3°, 51-min. taper cones for knitting with a set of conversion parts from Universal Winding Co., Box 1605, Providence, R. I. New twisters can also be obtained with the same cone builder.

The conversion parts include a pick motion applied to the taper-top builder and cone adaptors to accommodate cones on the spindle. The pick motion produces a filling wind by progressively raising the traverse with each successive stroke.

The tapers at the nose and base of the cone can be changed to suit different requirements by changing the number of picks taken on each traverse stroke.

Because the pick motion affects all spindles simultaneously, the ring twister must be gang-doffed when the pick motion is used. The spindles stop ready for doffing.

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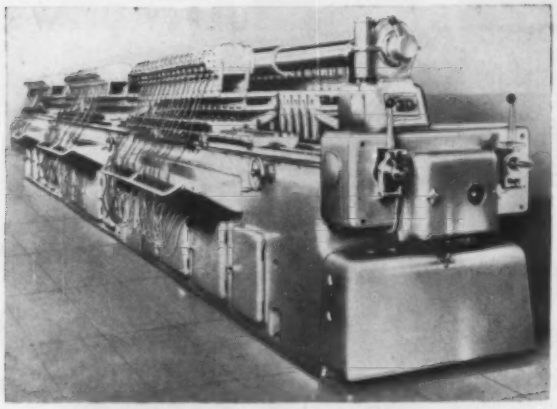
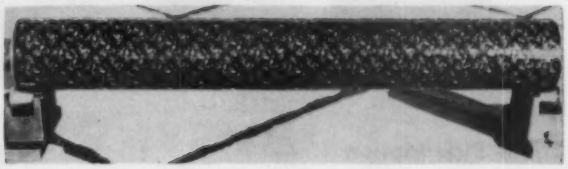


Photoelectric Pantagraph

A machine that will reproduce a design directly on a varnished-copper printing roll was shown at the First U. S. World Trade Fair by Olivetti Corp. of America. Manufacturer is the parent company, Ing. C. Olivetti & C. S. p. A., Ivrea, Italy.

The machine works from line drawings in black and white only. If colored patterns are the source, each color is separated into black-and-white outlines. The black-and-white design is then mounted on a mandrel on the machine, and electric eyes scan the pattern. The variations in light between black and white areas set up currents that are amplified and then motivate diamond-pointed styli that scratch the varnish on the print roll.



The mandrel carrying the pattern and the mandrel carrying the print roller are mounted on separate bases and synchronized to turn with each other.

The machine can be set up so that patterns may be enlarged or reduced in size for application to the print roll. The machine will engrave 30 to 75 lines per inch, and the pattern repeat can be set up for half-step or any variation that is desired.

Allowances for proper fit that are generally made by a sketch-maker can be taken care of automatically in the machine, according to the manufacturers.

The pantagraph is offered in a one-cylinder model and a three-cylinder model that will engrave three different colors at one time.

For textile purposes, the scratched rolls are etched out in acid to get the necessary depth to carry color.

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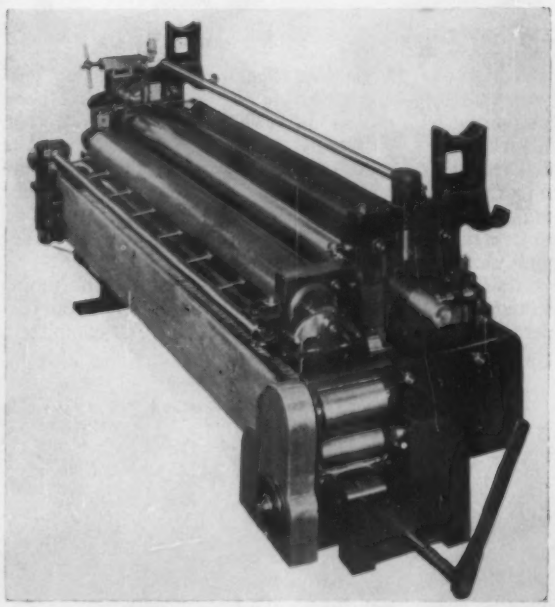

Burr-Crushing Rolls

Crushing rolls (Peralta) for woolen cards, manufactured by Carding Specialists Co. Ltd., Mirfield, Yorkshire, England, have been introduced in the United States by Stellite American Corp., 60 E. 42nd St., New York 17, N. Y.

The precision-ground, hardened steel rolls are adjustable along the helical line of contact to prevent excessive localized pressure that may injure fibers. Pressure is applied hydraulically. Oil is replenished automatically so that pressure remains the same at both ends of the roll.

A stripping doffer eliminates static electricity and permits the production of very fine webs. Flexible laminated-fibre scraping blades give a gentle but effective cleaning action. Adjustments are semiautomatic.

Circle T-5 on Reader-Service Card

Textile Motor

A line of enclosed fan-cooled self-cleaning textile motors is announced by Louis Allis Co., Milwaukee, Wis. Called the Clean-Flo, the motor is kept free of lint by a high-velocity fan. The totally enclosed construction prevents lint from entering the interior of the motor.

The motors are built to standard NEMA dimensions and are easily exchanged on machines now using NEMA motors. Versatile mounting permits the motor to be mounted in the aisle but directs the air away from the machine being driven.

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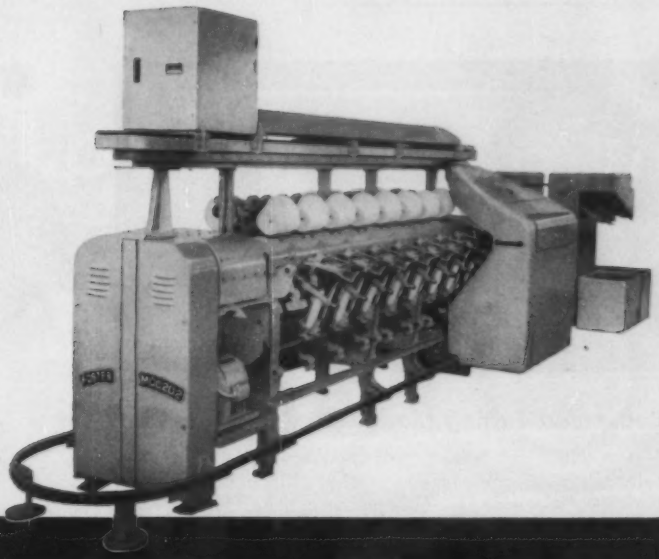
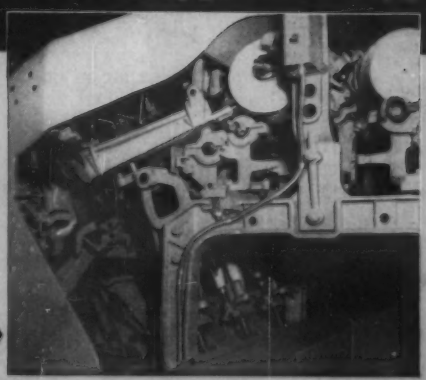
FOSTER
Model 202
AUTOMATIC CONE WINDER

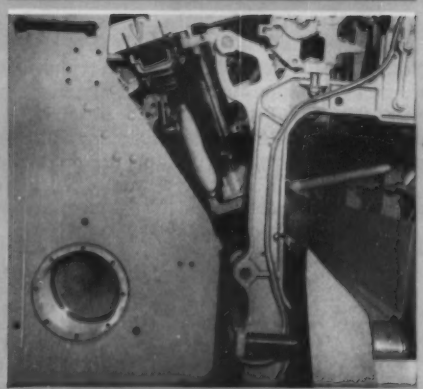


Here's Why It Increases Production 100% to 300%

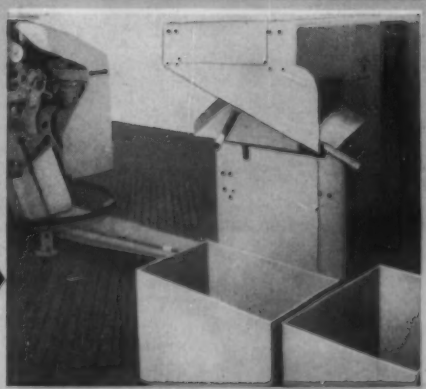
Operator's only duties are to drop full bobbins in chutes, put loose end in clip, don and doff cones and thread up new ones as needed.



Automatic tender travels around machine on rails — aspirator ignores end that is running, picks up ends down, which are then tied into weaver's knots.



Full bobbin moves into supply position from chute, as empty bobbin is automatically doffed.



Model 202 automatically sorts partially filled and empty bobbins, conveying them to two separate bins.

Automation increases production vastly over non-automatic winders — and for the first time automatically produces cones satisfactory for knitting, identical in quality to those produced on Foster Model 102. Write for full details.

FOSTER MACHINE COMPANY

Westfield, Massachusetts, U. S. A.

Southern Office—Johnston Bldg., Charlotte, N. C. • Canadian Representative—Ross Whitehead & Co., Ltd., 1475 Mountain St., Montreal, Que. and 100 Dixie Plaza, Port Credit, Ont.

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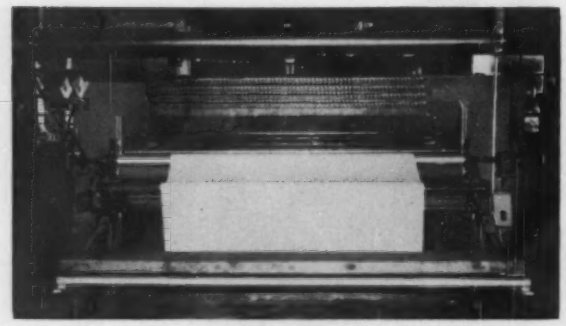

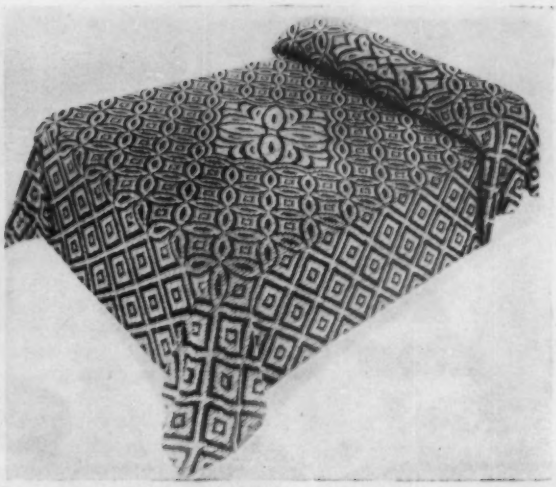

Bedspread Tufting Machine

A machine for tufting patterned bedspreads automatically has been announced by Cobble Brothers Machinery Co., Inc., Riverside Dr., Chattanooga, Tenn. The machine is sold under the tradename Controlled-Needle Yardage Tufting Machine.

By eliminating costly overlaying operations, this machine greatly reduces the cost of producing patterned bedspreads; the price of tufted patterned bedspreads now compares favorably with prices of woven patterned bedspreads.

The patterns on the machine are made by putting the tufts into the sheeting backing or by taking selected needles out of operation to leave the sheeting bare. The effect is contrasting tufted and untufted areas.

Because each needle in the machine is controlled individually, there are no pattern limitations; and any design can be made, either with or without repeats.

The accompanying photograph illustrates a bedspread without pattern repeats that was made on the machine. There is a difference between the pattern on the drops and that on the center panel; this bedspread also features a center motif and bolster design, which are an integral part of the pattern.

Patterns are made with electric controls. Pattern changes are relatively inexpensive and are made easily.

The machine is being built in ⅜-in. gauge 115 ins. wide. It is expected to produce 100 units per 8 hrs. of operation.

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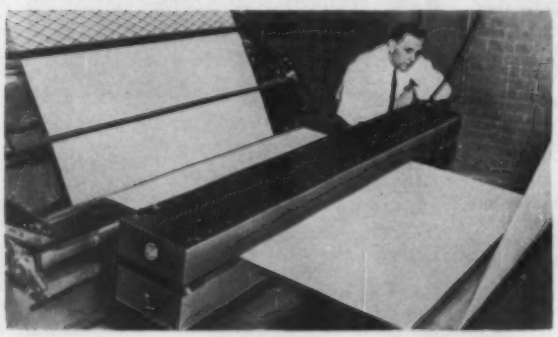


Metal Detector

An electronic detector so sensitive that it can spot specks of metal the size of a typewriter dot has been announced by Radio Corp. of America, 30 Rockefeller Plaza, New York 20, N. Y.

The detector, especially developed to locate tramp metal in textiles, provides continuous inspection of material moving at speeds of 10 to 1,000 ft. per min.

The unit can be installed so that it will trigger any one or a combination of alarm systems to stop the production line, sound a horn or bell, activate a warning light, or mark the area with chalk or dye.

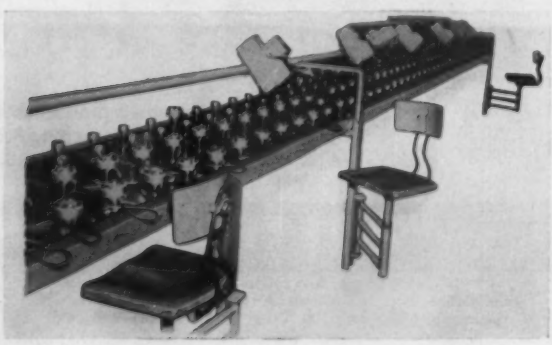
Circle T-8 on Reader-Service Card

Swing Chair for Inspectors

A bracket swing-chair unit for inspectors is being made by Adjusto Equipment Co., 515 Conneaut St., Bowling Green, Ohio. The chair has all the adjusting features of ordinary chairs.

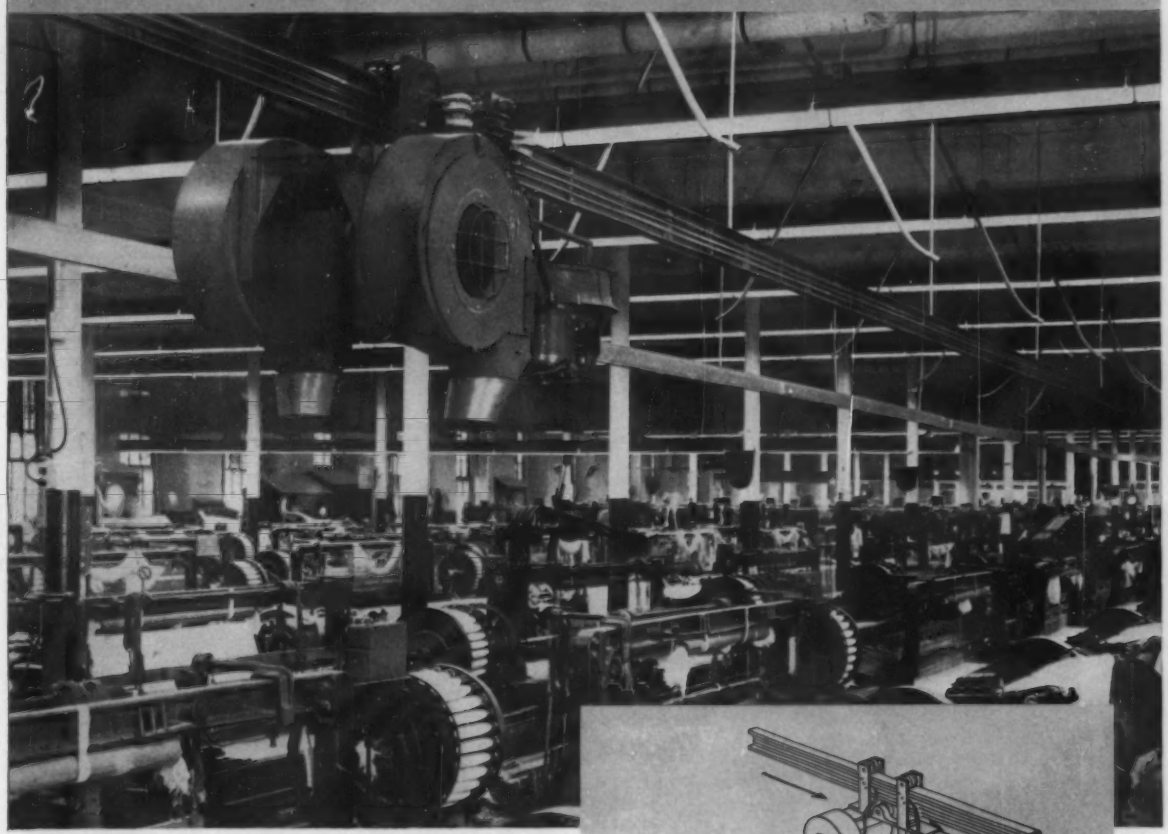
It can be raised or lowered 8 ins. and can hold a 600-lb. load. Chair seats and backs are upholstered for comfort.

Circle T-9 on Reader-Service Card



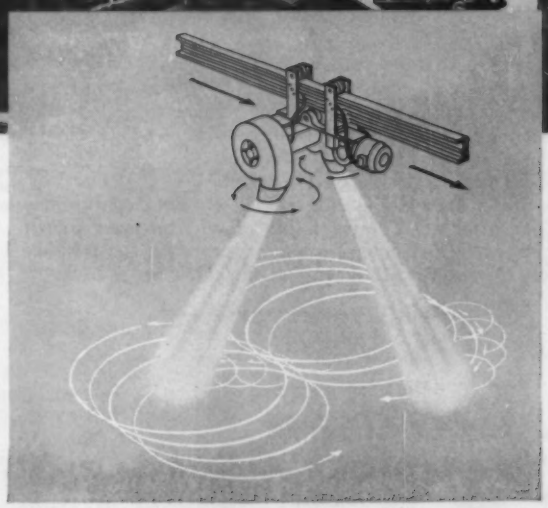
Amco Introduces it's New

Heliclone Loom Cleaner



Provides automatic, continuous cleaning of looms and ceiling • Drastically cuts cleaning costs • Steps up production • Improves quality of fabric • Reduces fire hazard • Improves weave room appearance • Boosts employee morale • Can be incorporated with beam handling equipment.

Write for further information, or ask to have an Amco engineer call.



Swiftly whirling outlet nozzles, driven by the air stream, direct the air jets at an acute angle in overlapping, circular paths. The result is a rapid series of high-velocity bursts of air over loom and warp surfaces for complete cleaning action.

AMERICAN MOISTENING COMPANY *Air Conditioning Systems and Textile Mill Equipment*

Executive Offices: Cleveland, N. C. Branches in Atlanta, Boston, Camden, Providence, Toronto

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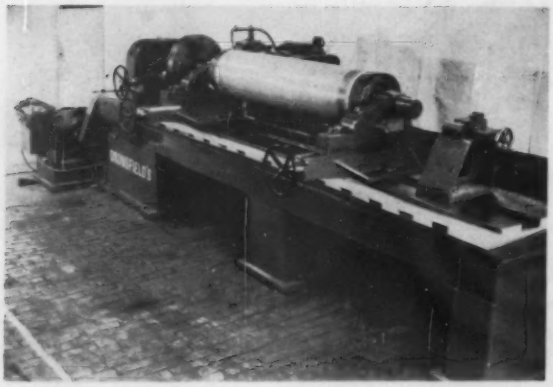

Roll-Grinding Machine

Any of the rolls commonly found in finishing plants can be reground on a machine developed by Dronsfield Bros. Ltd., Atlas Works, Oldham, England. The unit is heavily constructed and is available in models to accommodate rolls up to 160 ins. long.

The grinding head travels on a separate bed, which is protected from grit by a telescoping guard. The grinding wheel is driven by a separate electric motor. Grinding wheels can be dressed with a diamond-power tool provided with the machine. An attachment makes it possible to grind any usual degree of crown in rolls being processed.

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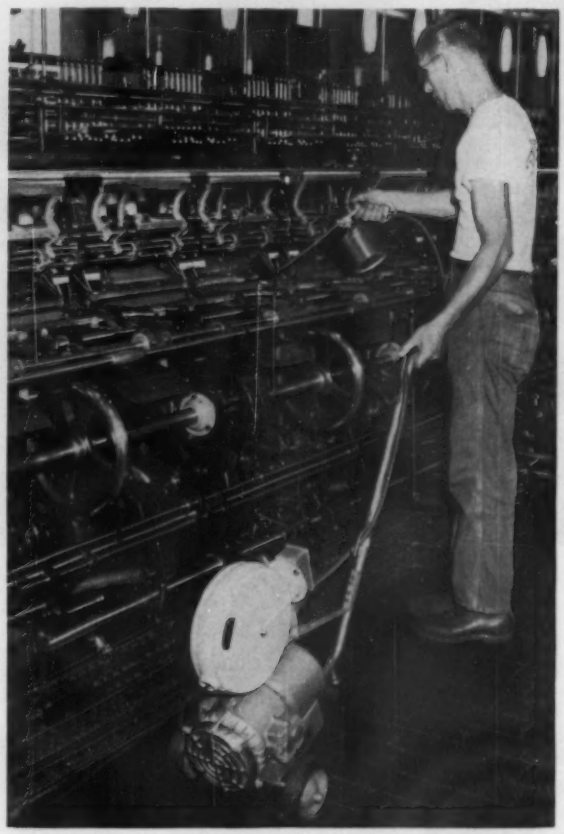


Portable Lubricator

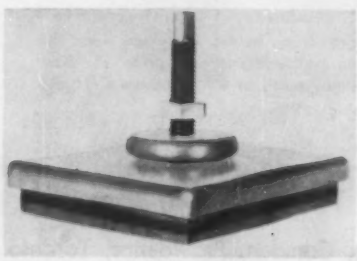
The Reading portable jet flushing device for full-fashioned-machine sinker heads, developed by Textile Machine Works, Reading, Pa., is also satisfactory for lubricating circular machines. The device, which consists of a standard portable air compressor and cart with a spray gun, improves machine efficiency and gives longer life to machine parts.

The compressor produces a constant pressure of about 35 psi., which is directed through a spray gun to force a steady stream of moisture-free needle oil into and through the sinker heads. This action keeps the sinker-head slots lubricated and flushed free of foreign material, and it lubricates the catch bar.

A 50-ft. extension cord from an automatic reel on the portable jet is plugged into a receptacle on the end frame of the machine. The cord automatically unreels as the knitter pulls the cart along the machine. The jet can be obtained with a 115- or 220-v. motor.

A machine can be sprayed in less than 1 min. The 1-qt. capacity of the spray tank is enough for three applications on one machine. The job is best done after every fourth set when the machine is idle and turned to the position where the needles are down and the catch bar is back.

Circle T-11 on Reader-Service Card



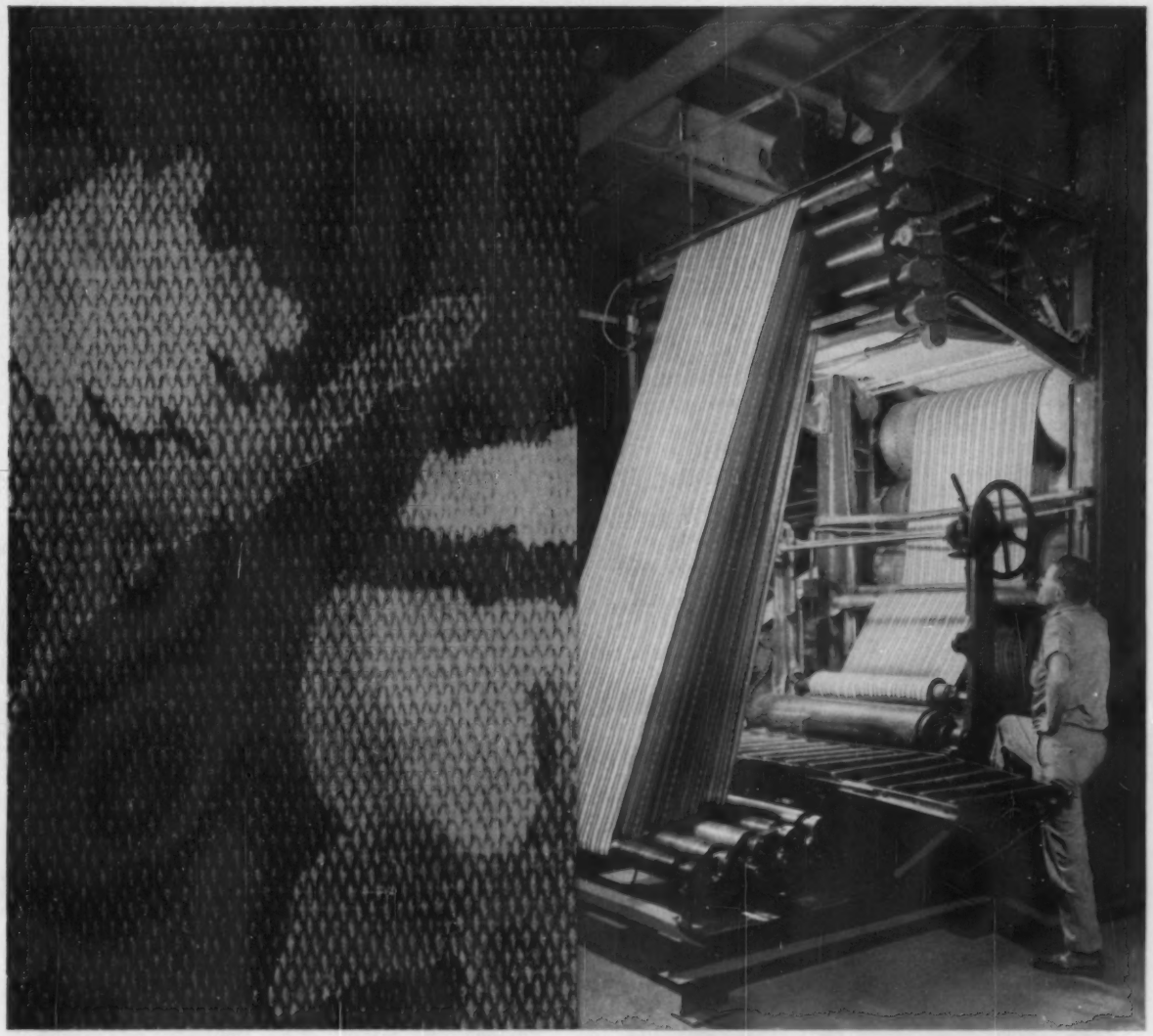
Machine Mount

A self-leveling machine mount, called the Level-Rite, has been announced by the Unisorb Div., The Felters Co., Boston, Mass. The mount consists of an all-steel base unit with leveling screw and plate combined with a special vibration-dampener pad.

The mount is available in seven models with loading ranges of 800 to 7,500 lbs. per unit; and in sizes of 4x4, 6x6, 8x8, and 10x10 ins. One unit is needed for each machine leg or mounting point.

Advantages of the mount are ease of leveling and anchoring. No bolts, cement, or lag screws are needed; and once leveled, the mount needs no further adjustment.

Circle T-12 on Reader-Service Card



FLAWLESS FINISHES

built into millions of yards of cotton print goods at Rock Hill

The Rock Hill, Printing and Finishing Company of Rock Hill, South Carolina, a subsidiary of M. Lowenstein & Sons, Inc., New York, N. Y., has become "the largest textile print works in the world" by producing beautifully printed and finished fabrics with mass-production economies.

That is why Rock Hill has used RHONITE R-1 finishes for many years. With RHONITE, cotton fabrics are given lifelong wrinkle resistance, improved dimensional stability and permanent surface effects—all without loss of desired handle. At the same time, RHONITE R-1 finishes are so easy to formulate, work with, and apply that they fit in perfectly with large-scale continuous processing. Write today for full details.

Chemicals for Industry

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WASHINGTON SQUARE, PHILADELPHIA 5, PA.

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RHONITE *is a trade-mark, Reg. U. S. Pat. Off. and in principal foreign countries.*

RHONITE R-1

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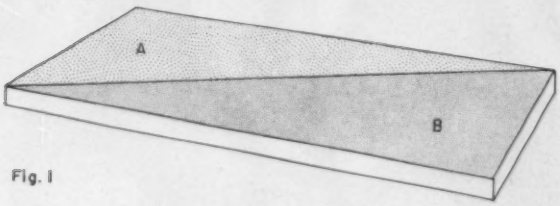


Fig. 1

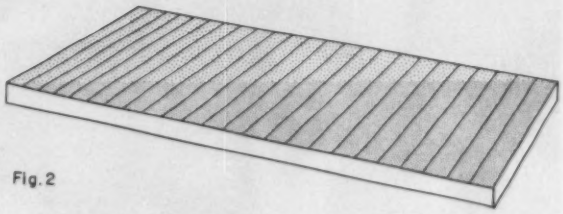


Fig. 2

Multicolor Printing Method

By means of specially designed color boxes and color-feeding equipment, it is now possible to produce up to 80 shades of color across the face of a 40-in. piece of print cloth, all from one print roller.

The method and equipment were developed by Keytone Laboratories, New Brunswick, Canada, and is offered to the industry under a licensing arrangement.

In principle, color is fed to the print roller through a longitudinal feeding spout composed of ½-in. sections. Each section carries a different color that is supplied from a 6-gal. multicolor magazine.

The delivery spout is fed from a magazine that may be removed and replaced with a refill. Auxiliary mixing equipment can supply 18 gals. of pastes with up to 80 color combinations in 5 to 10 mins.

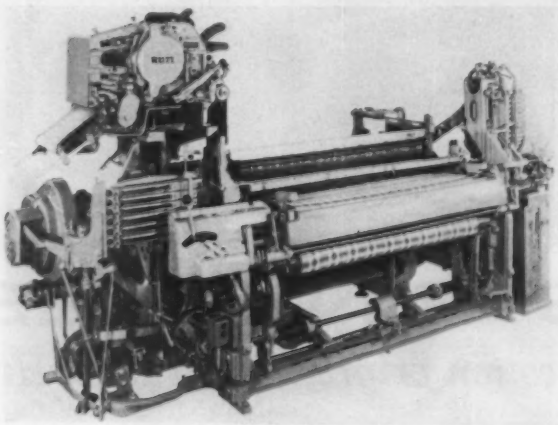
The possibilities in the system include ombré effects as well as sharp differences in color between adjacent stripes.

It is claimed that color reproducibility is made simple by the method and equipment employed, which is based on infinitely variable shades that are very closely controlled by the physical make-up of the blending equipment.

As will be seen from Fig. I, which represents a container into which color is placed, if the print pastes added to Compartment A and Compartment B are of different colors and if the diagonal divider is removed and replaced by a series of parallel dividers as in Fig. 2, each small compartment will contain a definite mixture of A and B.

It is from thoroughly mixed blends of the colors contained in similar compartments that the printing machine is fed.

Circle T-13 on Reader-Service Card



Automatic Loom

An automatic high-speed loom called the BANXTW/4 is announced by Ruti Machinery Works Ltd., Ruti, Switzerland. The loom is a multibox model for six shuttles and an automatic bobbin change for four colors.

Among other features of the loom are lower weight of the shuttle and a loose reed.

Circle T-14 on Reader-Service Card

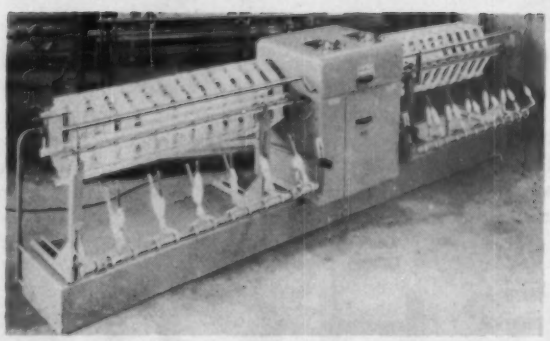
Reeling Machine

A high-speed precision reel, built by Croon & Lucke GmbH, Mengen, Germany, has two cantilever swifts arranged at an easy working height to the right and left of the completely closed case. Both swifts have separate driving and steering elements that are in the closed case.

The hanks can be easily drawn off the free end of the swifts. The reel can be attended by one operator. Counters control the weight or the number of threads in the skeins.

The swifts are controlled by electromagnetic brakes, and electric stop motions cause the machine to stop for thread breakages or bobbin run-outs.

Stellamcor, Inc., 60 E. 42nd St., New York 17, N. Y., is the American agent for Croon & Lucke.



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Southern

DURAWOOD Shuttles

An Unbeatable Combination Of Low Initial Cost And Longer Life

HERE IS THE SHUTTLE YOU HAVE BEEN LOOKING FOR IN YOUR NEVER-ENDING JOB TO OBTAIN LOWEST COSTS PER LOOM HOUR. FOR A VERY MODEST EXTRA OVER PLAIN WOOD SHUTTLES YOU GET AMAZING INCREASE IN SHUTTLE LIFE.

Durawood, Southern's trade name for a controlled process of compressing natural wood, offers you:

- ✓ a hardened surface area, toughened to resist wear and splintering, while leaving the core resilient, which holds down breakage;
- ✓ extra surface smoothness guaranteeing less yarn injury, higher quality goods, less down time, little shuttle care;
- ✓ negligible weight increase, requiring no major loom adjustments to start the shuttle;
- ✓ the low cost of wood, combined with the time and money-saving features above, bringing you increased savings.

Durawood shuttles are highly recommended for cottons, spuns, woolens and worsteds.

Make your next shuttle order "Southern Durawood" and you, too, will soon be counting your savings.

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PHILADELPHIA 32, PA.
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Southern

World's largest manufacturer of all type Shuttles. Comparison made them famous

TEMPERED · QUALITY Stehedco CONTROL · STEHIDE

Other Plants and Offices: Granby, Quebec, Canada—Lawrence, Mass.—Greensboro, N.C.—Atlanta, Ga.—Textile Supply Co., Dallas, Texas—Albert R. Breen, Chicago, Ill.

S-5719

Sweater-Setting Machine

A new tray-type sweater-setting machine, designed especially for Ban-Lon, has been announced by Turbo Machine Co., Lansdale, Pa. Alternating cycles of steam and vacuum at 265° F. are closely controlled in the new machine with electrical timers to get evenness and uniformity in the finished garment.

There are two tray carriers, one on each side of the setting cabinet. When a setting cycle is completed, the cabinet door opens and one carrier moves out while the other moves in. The operator simply loads the carriers.

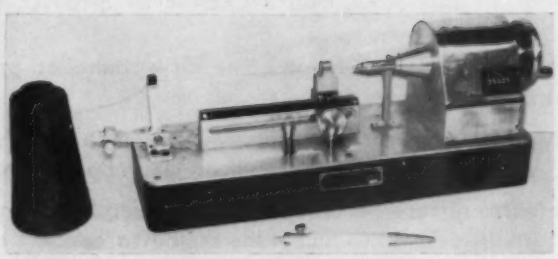
Each carrier holds 10 doz. sweaters. A typical setting cycle is 12 mins. Based on a 12-min. cycle, production up to 50 doz. sweaters per hour can be achieved.

Circle T-16 on Reader-Service Card

Singles Twist Tester

Designed by the Instrument Div., United States Testing Co., Inc., Hoboken, N. J., a new singles twist tester covers the 0- to 3-in. range in gauge length. The twist tester was designed for quick, easy operation by the direct-twist method.

Direct twist removal, as opposed to the untwist and retwist method, overcomes the possible errors caused by thick and thin spots in a long length of yarn.



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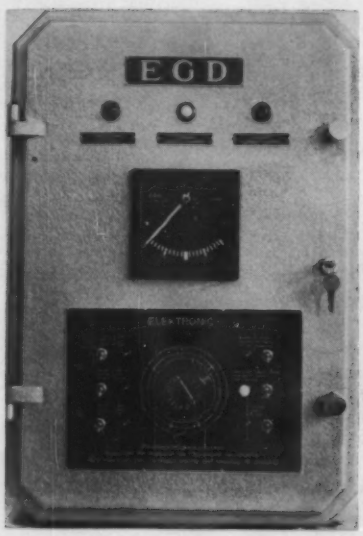

Moisture Control

A controller that gives a direct reading of the moisture content of fabric passing through a drying system, as well as adjusting the speed of the dryer, has been developed by Elektro-Gesellschaft M.B.H., Dornbirn, Germany. Stellamcor, Inc., 60 E. 42nd Street, New York 17, N. Y., is the American representative.

The unit works on the conductance principle, and the automatic controller has a proportioning element that varies drying-machine speed in accordance with the difference between existing and desired fabric moisture control.

Circle T-18 on Reader-Service Card

lustre that lives

...for the life of the fabric!

FAIRTEX Yarns with Metallized Mylar* never lose their glittering glamour . . . and outlast even the fabric itself!

Specifically developed for use in automotive fabrics, upholstery and drapery materials, mattress ticking, and hosiery, FAIRTEX Yarns with Metallized Mylar* are highly heat resistant, can be safely washed, drycleaned or scoured and do not tarnish.

There's no flaking or breaking of metal when you weave or knit with FAIRTEX.

For economy and efficiency, start using FAIRTEX Yarns with Metallized Mylar* *now* with cotton, wool, silk, linen or synthetics. You get greater yield per pound with smoother, more pliable and more uniform FAIRTEX Yarns.

... lustre that lives ... for the life of the fabric!

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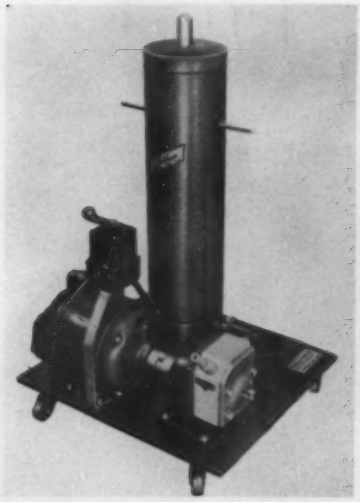


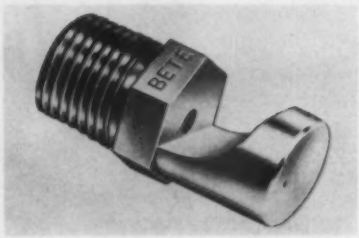
Filter Pump for Chromium-Plating Solutions

A completely corrosion-resistant unit for filtering chromium-plating solutions has been developed by Sethco Mfg. Co., 70-78 Willoughby St., Brooklyn 1, N. Y.

The filter column is made of polyvinyl-chloride, the pump body is made from polyethylene, and the impeller is made of Hypalon. The pump is self-priming and cannot leak. The unit is available in three models that will handle from 50 to 300 gals. per hr. of plating solutions.

Many other corrosive fluids can be handled by this equipment, which employes Dynel as the filtering medium.

Circle T-19 on Reader-Service Card



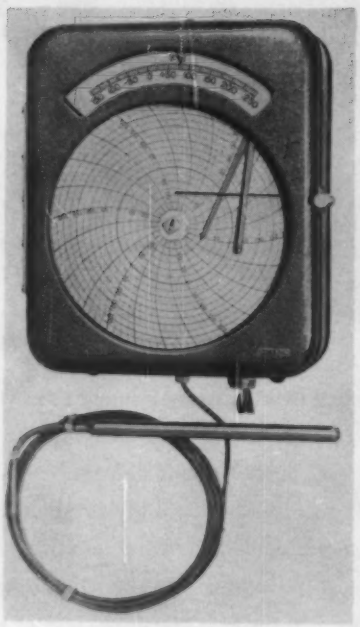
Nozzle for Air Washers

A wide-angle flat-spray-pattern nozzle for air washers has been announced by Bete Fog Nozzle, Inc., Greenfield, Mass.

The 145° nozzles at 40 psi. result in extremely low spray impact. They are available in nine models with $\frac{1}{8}$-, $\frac{1}{4}$-, $\frac{3}{8}$-, $\frac{1}{2}$-, and $\frac{3}{4}$-in. male pipe thread connections.

The orifice sizes vary from $\frac{5}{32}$-in. dia. to $\frac{1}{2}$-in. dia. with flow rates from $\frac{1}{4}$ gal. per min. to 75 gals. per min. Although the standard material is brass, the nozzles are available in various types of stainless steel, aluminum, nylon, Teflon, hard rubber, and other machineable plastics and alloys.

Circle T-20 on Reader-Service Card

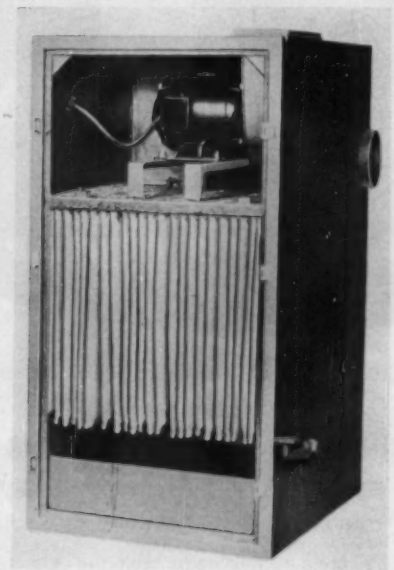


Temperature Recorder

A separate scale makes it easy to read operating temperatures at a distance in a temperature indicator-recorder produced by Dickson Co., 7422 Woodlawn Ave., Chicago 19, Ill.

The instruments are also available to indicate and record pressure, vacuum, and electrical and mechanical factors of process functions. A wide range of conditions can be covered by the instruments.

Circle T-22 on Reader-Service Card



Air Filter

A cloth-filter dust-collector cabinet is being manufactured by Lorit Mfg. Co., 287 Walnut St., St. Paul 2, Minn. The collector has 150 sq. ft. of cloth-filtering area and uses filters made from fine-woven cotton fabric chemically treated for spark resistance.

The cabinet size is 49¼x28¼x28 ins. Internally mounted motors and fans move from 580 to 1,100 cu. ft. per min. of air through the filters at speeds of 5,000 to 8,000 ft. per min.

Circle T-23 on Reader-Service Card

Yarn Inspector

A photoelectric instrument that will detect slight variations in solids, liquids, and visible gases is being made by Lindly & Co., Mineola, N. Y.

The instrument will detect a minute break in one of the filaments in a length of nylon yarn at a distance up to 25 ft. In the inspection of yarn, the variations can be counted and, if desired, a stop motion can be activated.

Circle T-21 on Reader-Service Card

Center Fork for Looms

A center fork that can be fitted to many existing makes of looms is available from George Hattersley & Sons Ltd., Keighley, England.

All parts of the center fork are clearly marked with a part number and are instantly replaceable. Some of the parts are heat-treated for long life, and lubrication is not essential.

The mechanism of the fork is easily adjusted since screws and lock nuts are readily accessible. The fork is suitable for all fabrics from the finest silk to the coarsest wool.

Circle T-24 on Reader-Service Card

CONTINUED ON PAGE 220

Columbia-Southern soda ash has been favored with the trusting confidence of leading American glassmakers since 1899. They find, year after year, that this basic alkali is manufactured with extreme care to conform to their particular requirements. Nor is the glass industry unique in this respect. Columbia-Southern has learned with creative care the varying soda ash needs of producers and processors active in chemicals, cleansers, soap, pulp and paper, textiles, metals, petroleum refining, water treating, leather, enamels, pigments, ceramics and other fields. Couldn't you benefit from this experience, and the resulting superiority of Columbia-Southern's soda ash?

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NEW DYES AND CHEMICALS

Surfactant

Poly-Tergent J-300 . . . has good wetting and detergent properties. It is compatible with soap, anionic, and cationic materials and works well in 3% solutions of acetic acid or caustic soda. Suggested for wetting-out operations, carbonizing, scouring, and kier boiling. Olin Mathieson Chemical Corp., Industrial Chemicals Div., Baltimore 3, Md.

Circle D-1 on Reader-Service Card

Surfactant

Carbanone A . . . is said to combine the best features of nonionic and anionic surfactants. The product is recommended for all scouring and wetting operations on cottons or synthetics. Stability to acids, alkalis, and the usual processing temperatures is good. Hart Products Corp., 1440 Broadway, New York, N. Y.

Circle D-2 on Reader-Service Card

Antifoaming Agent

Crestex Formula DPA . . . is recommended for dyeing, scouring, and bleaching operations where excess foam on the baths is undesirable. The product is effective over the entire pH range and can be made up in stock solutions for use as required. Crest Chemical Corp., 225-235 Emmett St., Newark, N. J.

Circle D-3 on Reader-Service Card

Direct Dye

Lumicrease Bordeaux 3LR . . . is suitable for automotive and decorative fabrics. The color possesses extremely good fastness to light, perspiration, and crocking. Wetfastness is good and can be improved by aftertreatment with Cuprofix, Sandofix, and/or resins. The dye reserves acetate and gives good cotton-viscose unions. Sandoz Chemical Works, Inc., 61 Van Dam St., New York 13, N. Y.

Circle D-4 on Reader-Service Card

Dyeing Auxiliary

Hartex Retarder A . . . helps produce level dyeings of light shades on Orlon when cationic dyes are used. The product functions as a competitor for the reactive sites on the fiber, which slows the strike and thus aids in level dyeing. Hart Products Corp., 1440 Broadway, New York, N. Y.

Circle D-5 on Reader-Service Card

Polyester-Fiber Dyes

Eastman Polyester Yellow RL . . . produces economical, level shades of bright, golden yellow on polyester fibers. Applied either with a carrier or under pressure, the shades have good fastness to light, washing, and sublimation. With selected carriers, the color dyes good union shades with triacetate fibers.

Circle D-6 on Reader-Service Card

Eastman Polyester Dark Red FL . . . produces dark wine, bordeaux, or brownish shades on polyester fibers. Heavy shades have outstanding fastness to washing, dry cleaning, perspiration, sublimation, and very good lightfastness. Union shades are possible with triacetate fibers when selected carriers are used. Eastman Chemical Products, Inc., 260 Madison Ave., New York 16, N. Y.

Circle D-7 on Reader-Service Card

Let Water Do the Work

You can skip an extra kier boil and get consistent and satisfactory whites on 2.28-yd. drills if you will make full use of the log washers and sour pits still to be found in many bleacheries.

The principle can be applied to any heavy fabrics normally requiring a double kier boil to get a good bottom for bleaching. The savings in time and chemicals are very considerable, and the danger of tendering goods in the second kier boil are eliminated.

Faced with a production problem, one bleachery developed the time-and-money-saving routine described below.

First, the goods are given the usual singe-desize run in a 2% solution of Rapidase and piled into bins and let lay for 6 to 8 hrs. Then they are hauled out through a 20-strand log washer fed by a 6-in. cold-water pipe and from there are led into a brown-sour pit containing a sulfuric-acid solution maintained at 1 to 2° Tw.

Excess acid is squeezed out in a mangle; and the goods are hauled into a J-box, where they are retained for 30 to 40 mins. Then they are pulled through two 20-strand log washers equipped with 6-in. cold-water supply. The water is not stinted; the washer box should have a complete change of water every 2 to 3 mins.

After the brown sour, the goods are piled into a kier and given a 12-hr. boil. Formulations may vary slightly depending on water conditions, but a satisfactory boil can be obtained from:

330 lbs. caustic soda
100 lbs. sodium silicate 35° Bé
100 lbs. pine oil-red oil soap
30 lbs. tetrasodium pyrophosphate

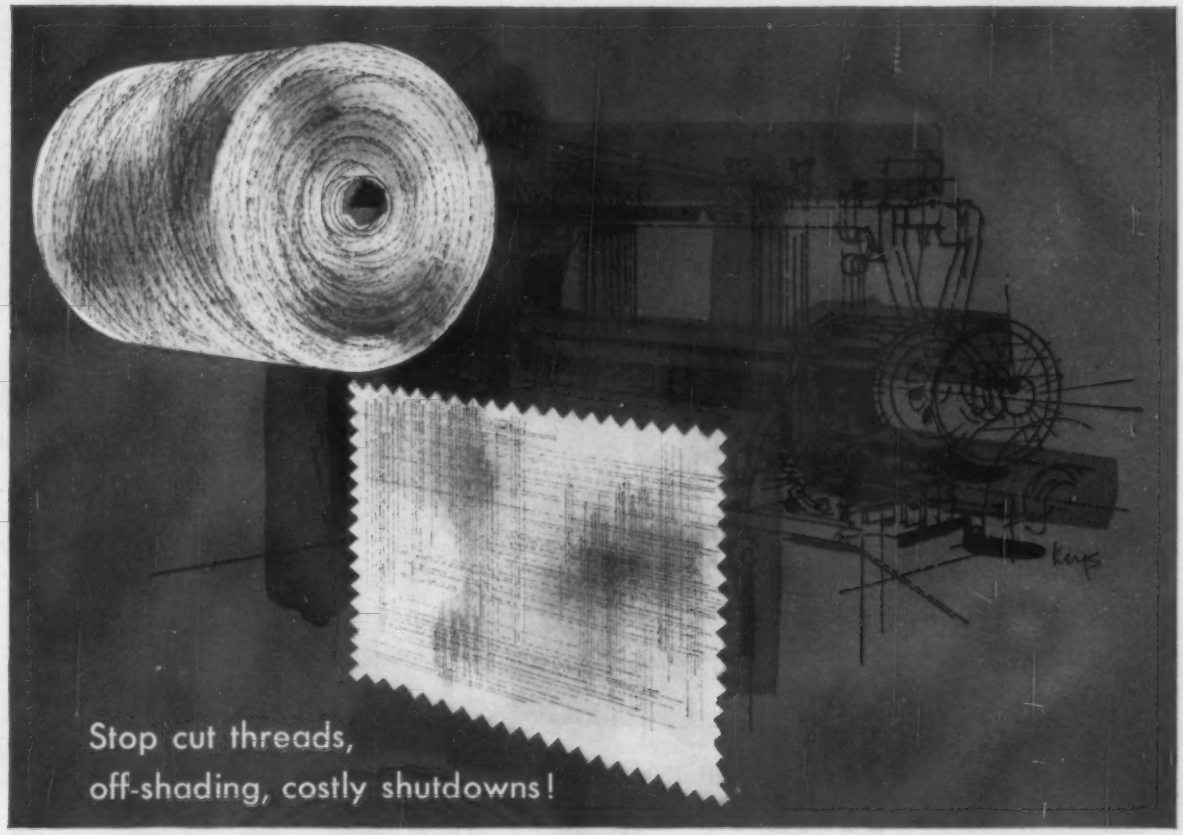
Boil at 15 lbs. pressure 10 to 12 hrs.

The amounts will handle 7,500 lbs. of fabric.

After the boil, the kier is cooled and thoroughly drained; and the goods are hauled through another cycle of wash, sour, wash, wash, exactly as they were before being boiled.

As the goods leave the last washer, they are saturated in a solution kept at 5 to 6 gms. per liter of available chlorine. A lay-over period of 1 to 1¼ hrs. in a J-box completes the bleach, and the usual washing and white-souring operation with SO_2 follows.

The wash before boiling removes 65 to 70% of the sizing and loose foreign matter before the goods go into the kier, with a corresponding reduction in the job the kier boil has to do to get the cotton really clean.



Use MORTON CHEMICAL GRADE '999' Salt

'999' is the all sodium salt (sodium chloride and a trace of sodium sulphate) that prevents dyeing failures caused by salt high in calcium.

Morton Chemical Grade '999' Salt makes it possible for you to get softer finishes, more even shades, greater color intensity. That's because Morton '999' is a low-cost, high purity evaporated salt, free of objectionable calcium and magnesium compounds.

Morton Chemical Grade '999' is more than 99.9% pure sodium chloride, recommended for use whenever commercial calcium-free salt is required.

Available in 100-lb. bags or bulk, '999' is specifically recommended when direct salting is used in dyeing raw-stock, package, beam, beck or jig with either sulphur, direct, or naphthol dyes.

☐ *Please send me more information about Morton Chemical Grade '999' Salt.*

☐ *I would also like to know how much I can reduce calcium and magnesium content by using Morton '999' Salt. Please have a Morton Brine Engineer call on me to explain the benefits of using Chemical Grade '999' Salt.*

Name_____

Title_____

Company_____

Street Address_____

City_____ Zone____ State_____

MORTON SALT COMPANY

INDUSTRIAL DIVISION

Dept. TW-6, 120 So. LaSalle Street,
Chicago 3, Illinois

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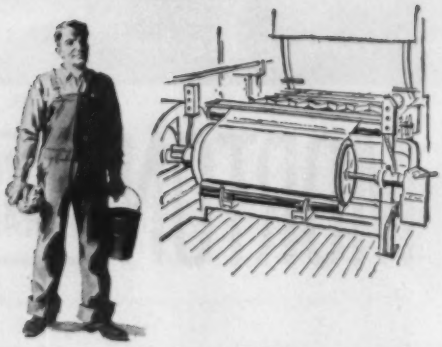
Maintenance becomes a small item



with Crucible Stainless Steel

On the new continuous high-temperature dyeing machines, rust-free Crucible Stainless prevents deterioration of the various types of pressure seals where the fabric enters and leaves the pressurized vessel. Dye liquids, no matter how damaging, can be handled by Crucible Stainless without deterioration because its polished surface resists corrosion and Crucible Stainless is renowned for quick, easy cleaning. Pin boards, bobbins and yarn carriers produce much better yarn when made of Crucible Stainless because it won't snag the yarn – it actually stays smooth forever.

It will pay you to find out more about how this cost-cutting material can make equipment turn out better quality yarn at lower cost. Do either of 2 things: (1) Write for Crucible's 32-page booklet, "Making the Most of Stainless Steels in the Textile Industry", or (2) Get in touch with your local Crucible representative. *Crucible Steel Company of America, Oliver Bldg., Mellon Sq., Pittsburgh 22, Pa.*

CRUCIBLE first name in special purpose steels

Crucible Steel Company of America

Canadian Distributor—Railway & Power Engineering Corp., Ltd.

Do you need help on a technical problem? TEXTILE WORLD is at your service in helping solve problems in yarn manufacturing, weaving, knitting, dyeing, finishing, and other textile operations. A large staff of mill men, consultants, and other experts are available for authoritative answers. Send your problems to the Editor, Questions and Answers, TEXTILE WORLD, 201 E. Coffee St., Greenville, S. C.

Cold-Bleach Prepare Helps To Get Good Whites

Technical Editor:

We have had trouble in producing a good bottom on 2.00-yd. coutil fabrics. These goods cannot be washed in the rope because they develop cracks that persist through finishing. We don't have any progressive boil-off machinery and would like to know if you can suggest a method of bottoming these goods on jigs. (1292)

The following routine has been successful on fabrics similar to the one you mention:

1. Pad in 1% Rapidase and let lay for 2 hrs.
2. Run down on the jig in cold water; then give two ends in water at 180° F.
3. Make up a scour bath containing:
   - 10 lbs. soda ash
   - 6 lbs. caustic soda
   - 3 lbs. low-titer soap
   - 1½ lbs. wetting agent

   Run the goods at 180 to 190° F. for 20 ends.

   Wash out in two ends hot water, flushing over the top.

   Cool off in one end of cold water.
4. Make up a bleach bath containing:
   - 1 gal. 100-vol. peroxide
   - 7 pts. sodium silicate 35° Bé
   - 1 pt. wetting agent

Run the goods in this solution for two ends cold, and let them stand overnight. Hold the liquor in the jig.

5. In the morning, heat the bleach bath to 160° F. and run the goods four ends; then rinse for two ends in overflowing hot water and shell up in cold water.

This method will produce a good white and a satisfactory bottom for pastel shades.

Here Are Seven Tips To Prevent Broken Picks

Technical Editor:

We are having difficulty running 17s worsted yarn on W-3 looms and cannot prevent broken picks. Do you have any suggestions? (1282)

Use this checklist to prevent broken picks:

1. Test the yarn breaking strength, and compare it with yarn of similar size and quality that gives you no trouble in weaving.
2. Wind the bobbins to a size that will clear the walls of the shuttle.
3. Inspect loom bobbins for roughness, and discard bobbins not in good condition. Use enameled or lacquered bobbins rather than bobbins with a natural finish.
4. Check winding machines for spindles out of line, broken porcelain yarn guides, and rough tension pads.
5. Wind the filling with only enough tension to prevent the filling sloughing off in weaving.
6. Check shuttles at the loom and adjust the tension eyes with the minimum tension.
7. Check whether the filling is breaking or whether it is cut by the shuttle. A shuttle that is not thrown straight may be the cause of the trouble.

Papain Is Enzyme for Shrinkproofing Wool

Technical Editor:

What is the papain process of shrinkproofing wool? (1277)

Papain is an enzyme that is obtained from the fruit or trunk of the paw-paw tree, which grows in tropical regions. Papain, which is a proteolytic enzyme, is a ferment that breaks down protein molecules. Wool is attacked by this enzyme.

Papain consists of large molecules, which are unable to penetrate to the interior of the wool fiber; so the molecules' action is restricted to the wool scales. The action of papain on wool is slow; so it is generally used with sodium bisulfite to speed the action.

The papain and sodium bisulfite are used in an aqueous solution, which is adjusted to pH 6 to 7 with sodium carbonate. The process requires from 10 to 60 mins.

The chief disadvantage of the papain process is that its attack on wool is not regular. The process particularly attacks the weathered tips of wool.

A treatment, called the perzyme process, also uses papain and gives a more-uniform product. However, the process is a two-stage treatment.

The wool is treated with hydrogen peroxide first and then with papain and bisulfite. The process is slow, but it has been used on a commercial scale.

Crease-Resistant Finish on Linens Is Not Easy

Technical Editor:

How can we apply a crease-resistant finish to bleached and dyed linens? (1296)

Applying a crease-resistant finish to linen is difficult. Flax fibers vary in consistency far more than cotton, and some flax fibers are more receptive to resins than other fibers.

When a nitrogen-nuclear resin is applied to linen, the fabric tends to become brittle, tender, or weak. If this treatment is used, the fabric should be given an alkaline treatment to swell the fiber-resin combination. After this treatment, the fabric should be neutralized.

One plant in the U. S. does successfully apply crease-resistant finishes to linen, but it processes only one construction and specifies the source of the linen. Tootal, Broadhurst, Lee of England, however, has recently developed a promising finish for linen.

How To Make Tweeds From Three-Run Yarn

Technical Editor:

We want to make an 11½- to 12-oz. fabric, 60 ins. wide, from new wool for tweeds. We plan to use three-run yarn in the warp and filling on W-3 looms. How many ends will we dress the warp, and how many picks do we need for the filling? How wide do we need to make the gray goods to finish 60 ins? What twist should we use in the yarns? Is there any advantage in using white nubs in the warp to overcome filling bars? (1306)

To make an 11½- to 12-oz. woolen tweed fabric using three-run warp and filling, use 1,840 warp ends with about 20 ppi. A No. 12 reed reeded two warp ends per dent will give you a reed width in the loom of 76.6 ins. This will finish about 60 ins. wide.

Dress the warp about 2 ins. wider than the reed width. If the warp is dressed too narrow or too wide, the warp yarn may chafe in the heddles and reed and cause excessive warp breakage.

Draw the warp in on four harnesses. Check the reed for unevenness and bent dents. The twist or turns per inch in spinning should be from 8 to 9 tpi. Increasing the twist will make a harder yarn, and decreasing it will make the yarn softer.

Nub yarn is used to give the fabric a nubby appearance and will not help to overcome filling bars, which are caused by uneven or shaded yarn and by uneven weaving.

Wash-and-Wear Cottons Are Resin Treated

Technical Editor:

What is the difference between minimum-care cottons and wrinkle-resistant cottons, and what fabrics are treated? (1293)

Minimum-care cottons or wash-and-wear cottons require little or no ironing. These cottons are treated with thermosetting resins that penetrate into the fibers, change their chemical form, and become a permanent part of the cloth. These resins are an actual part of the cloth, will not wash out, and add shrinkage resistance to the fabric.

Wrinkle-resistant cottons are similar to minimum-care cottons. Both have cotton fibers and thermosetting resins bonded together. Less resin is bonded with the fibers for wrinkle resistance, and the process requires less time and expense than the minimum-care treatment. The resin treatments, when properly applied, will control shrinkage within 2% and will not wash out.

The most popular fabrics for minimum-care and wrinkle-resistant cottons are: percales, lawns, batistes, corduroys, oxfords, sateens, ginghams, broadcloths, and voiles.

Maifoss Process Is For Two-Color Dyeing

Technical Editor:

Can you tell me more about the Maifoss process of dyeing wool [TEXTILE WORLD, March, '57, p. 176]? (1290)

There are a number of methods of obtaining two-colored effects in a single dyebath by making fabrics from two or more fibers of different dye affinity. Similar results can be obtained on all-wool cloths if a proportion of the yarns or fibers has been treated to give either a resist or an enhanced dye affinity. Chlorination will give this effect.

The Maifoss process, however, allows different shades to be simultaneously dyed onto different parts of the same wool fiber or onto different wool fibers present in an ordinary wool blend.

The theory behind the process is not yet quite clear, but it seems possible that the different dyeing affinities of different fibers or parts of fibers in an ordinary blend of wool are being used when the Maifoss process of dyeing is used.

Particular dyestuffs are selected to exaggerate this difference, and dyeing assistants are used to increase the contrast. Assistants include tanning, synthetic tanning substances, and sulfonic acids condensed with formaldehyde.

In the simplest application of the process, a black dye can be applied irregularly onto the wool so as to produce a charcoal gray. The shade produced is more uniform than that obtained by mixing black and white tops during drawing. The shade approaches the true melange grays in respect to uniformity, but the method is much cheaper to produce than true melanges.

The process originated in France.

Humanics — A TW Brief

Don't Judge a Worker By Production Alone

To judge a mill worker by his production is an easy method. It may also be the means of discouraging some good employees or of losing their services altogether.

Some times an employee with only a fair production record has been using a part of his time and energy for duties that are not important enough to assign to anyone. But they are duties that add to general efficiency.

Unless foremen are shown the worth of workers who voluntarily do these odd tasks, they won't attempt to give such workers the credit they deserve.

It may not be possible to reward an employee financially when he sets an example by unfailing promptness, when he acts quickly and intelligently in emergencies, when he's constantly on the lookout to spot equipment trouble, or when he puts a dissatisfied fellow-worker in a better frame of mind.

Usually it's recognition that such a volunteer worker wants above all else. He asks only that mill management understand why his production is merely average instead of tops. He doesn't expect a write-up in the company magazine every time he performs work that doesn't show up. All he asks is assurance that his efforts are appreciated. George M. Dodson

Cure Card Trouble With New Bearings

Technical Editor:

We are having trouble with cut sliver and oil spots on our card sliver. Do you have any suggestions? (1289)

Check your journals. If they are worn, turn them down and put steel sleeves on them. Turn the sleeves down to standard size. This practice will keep oil off the calender, doffer, and clothing and will cost you about $16 per journal.

Ream out the journal holes and press in Oilite bearings. This will keep the rollers in line and eliminate lost motion, which could be the cause of the cut sliver.

what have

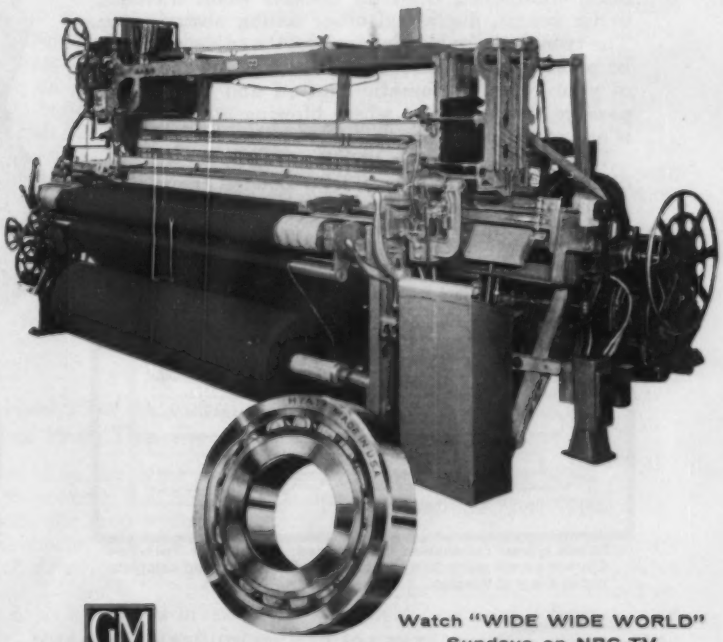
HYATTS

to do with all this?

It takes *fine bearings* to weave *fine fabrics!*

Women's eyes are mighty sharp when it comes to dress materials. Milady can spot the difference in fabrics at a glance . . . her choice will depend as much on *what* a frock is fashioned from as on *how* it's fashioned. And that's why HYATTS can help influence her decision!

HYATT Hy-Roll Bearings can make a big difference in the sales appeal of your fabrics by maintaining critical settings far more accurately than fast-wearing plain bearings which allow excessive play. HYATTS help you lower costs, too . . . because they save up to 40% on power, up to 98% on lubrication, prevent oil spatters and reduce maintenance costs from preparatory right through to finishing operations. *Be sure to specify HYATT Hy-Roll Bearings on all your new or modernized equipment—it pays!*
Hyatt Bearings Division, General Motors Corporation, Harrison, N. J.



GM GENERAL MOTORS

Watch "WIDE WIDE WORLD" Sundays on NBC-TV

HYATT HY-ROLL BEARINGS FOR TEXTILE INDUSTRY

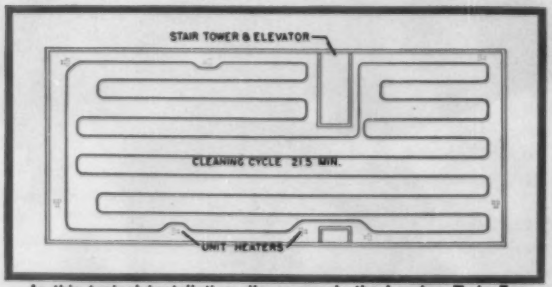
For more data, write this page number on Reader-Service card. →

it cleans where it blows... it goes where it's needed!

More and more mills today keep their ceilings clean and free of lint with the Louden Automatic Twin-Fan Ceiling Cleaner which cleans *continuously* without disturbance to production or personnel below.

The twin fans, an exclusive Louden feature, sweep in *opposite directions* on both sides of the track at once, eliminating dead air pockets when traveling under beams, ducts and other ceiling obstructions. The twin fans are also independently adjustable, can be pointed in any direction, thus meeting the needs of your room. Automatic shut-off and turn-on for passage through areas where blowing is not needed is one of the features available.

If you have a ceiling cleaning or a materials handling problem of any type, let a Louden engineering representative tell you more, what it will cost, what you will save. Your inquiry will receive prompt attention.



In this typical installation diagrammed, the Louden Twin-Fan Cleaner travels along 2800 feet of Monorail track making complete circuit every 22 minutes.

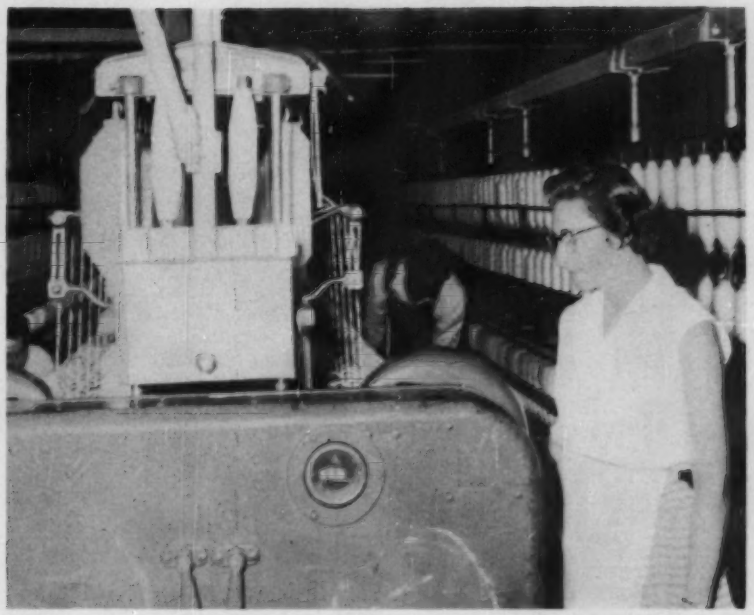
Louden

THE LOUDEN MACHINERY COMPANY

7106 Court, Fairfield, Iowa

A Subsidiary of Mechanical Handling Systems Inc.

SINCE 1867...THE FIRST NAME IN MATERIALS HANDLING



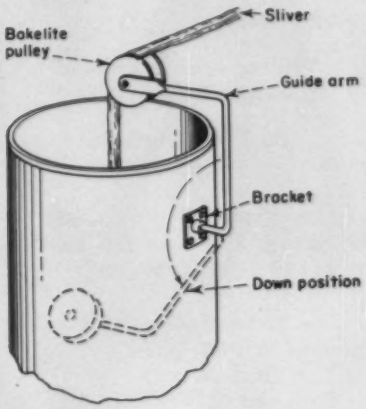
Use Standards To Assure Correct Bobbin Build

In our spinning room, we used to have a hard time producing bobbins with the correct build. There was no real standard by which to judge a proper bobbin.

The management recently made some changes in other departments that called for an absolutely correct bobbin build. Hit-or-miss builds were not acceptable.

To assure correct bobbin build, the superintendent selected two perfect bobbins from each frame and mounted them at the end of the creel. Now if a spinner is in doubt as to the bobbin build, all she has to do is compare the dubious bobbin with the standard.

If the build is not correct, the spinner calls for a fixer who adjusts the frame until the builder motion is working properly. Since we adopted this system of using standards, we've had very few bobbins rejected because of build. (K-3419) *Russell Mfg. Co., Alexander City, Ala.*

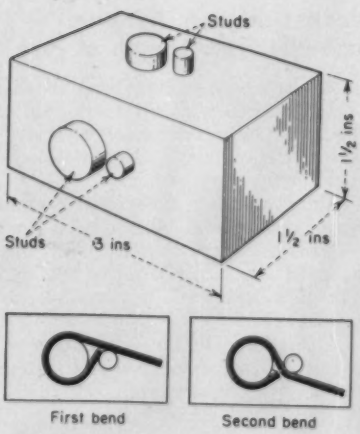


Movable Guide Protects Tender Drawing Sliver

Our roving frames have no lifting rolls, and sliver from partly empty drawing cans used to be damaged as it was dragged across the edge of the can. Unevenness and broken ends were the result, especially when we were running extra-tender sliver.

We overcame the trouble by making a sliver guide that can be attached to the side of the can as illustrated. The round guide arm fits into the collar of a bracket bolted to the side of the can. Bolt heads are on the inside of the can and tightened down so they will not snag the sliver. The guide wheel rotates easily to prevent the sliver from being stretched or broken.

After the can is empty and ready to be returned to the drawing frames, the guide is pushed to one side where it stays out of the way until needed again. (K-3436) *I. J. Abraham, Warangal, India*



Bend Hooks for Jacquard Machine With This Jig

In our shop, we often need wire hooks to connect the jacquard machine with the drop boxes, regulator, terry movement, etc. We make these hooks of different sizes on a simple jig.

Two holes are drilled in each side of a steel block, and studs of different sizes are pressed into the holes. When hooks are needed, the block is fastened in a vise and the wire is bent around the appropriate studs to make the size hook desired. (K-3347) *W. MacHold, Gotzis, Austria*

Prevent Accidents With Ridge Around Foot Stool

Our knitters use stools to help them thread the yarn when yarns are being changed or rethreaded. To keep knitters from becoming unbalanced and falling off the stools, we nailed 2x1-in. strips of wood around the edges of the stool.

About 1 in. of the strip projects above the edge of the stool and warns the knitter if his foot comes in contact with it. (K-3427)

April Prize-Winning Kink

The best Kink published in the April issue of TEXTILE WORLD, according to our reader-judges, was:

"Filling-Frame Bracket Controls Bobbin Size"

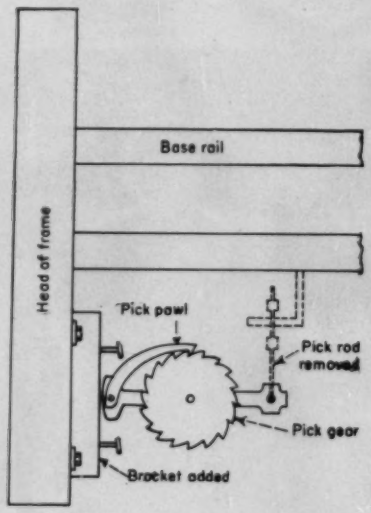
By L. P. Scarboro
Trion, Ga.

The winner is being sent a check for $25 with the compliments of TEXTILE WORLD.

The prize-winning Kink is reprinted at the right.

Each month TEXTILE WORLD awards $25 to the submitter of the Kink judged by a panel of over 300 mill men as the best for that particular month. A new batch of Kinks appears each month, and a new group of readers acts as judges each month.

If you are asked to judge one of these days, be sure to help select the best Kink by sending back your answers in time for final tabulation. Closing date for judging is the last day of the month in which the Kink appears.

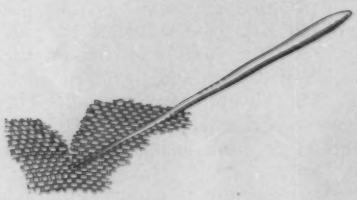


Filling-Frame Bracket Controls Bobbin Size

Our Whitin filling frames are equipped with a pick rod that causes the pick pawl to operate. These rods sometimes are bent accidentally; or they may be bent intentionally by doffers so that bigger bobbins of yarn will be made and the frames will run longer between doffs.

The oversize bobbin will not fit in the loom batteries and shuttles. Much of the yarn must be rewound or put into waste. We hit upon an idea that makes it impossible for anyone to change the picks without the use of a wrench.

A bracket was built to fit on the inside head of the frame. Into this bracket we inserted two $\frac{7}{8}$-in. rods with a crosspiece on the ends. By setting these rods at the right place, the pick-pawl holder strikes them and gives the right number of picks. (K-2994) *L. P. Scarboro, Trion, Ga.*

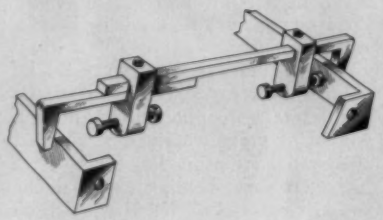


Pick-Outs Are Made Easy With This Handy Tool

In picking out tight weaves, warp ends are often chafed or broken when the tear is made through the filling yarn. Repairing these ends sometimes requires as much work as the picking-out operation.

A sharp steel tool similar to a heavy knitting needle makes the job of tearing easier. By scratching warpwise down through the filling yarn, the warp ends are separated with a minimum of damage as the filling ends are severed.

The tool is also useful as an auxiliary to the pick-out comb for removing the short ends of filling from the selvages. (K-3062) *Albert Frantz, Berwick, Pa.*

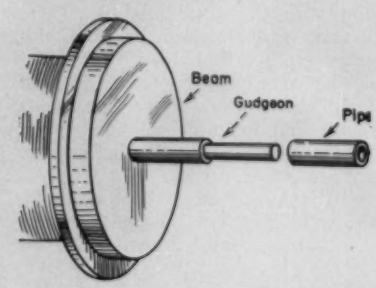


Adjustable Clamps Have Many Uses in the Workshop

When work must be positioned and held securely, such as in welding or for gluing woodwork, adjustable clamps made as shown in the sketch are very useful. Extra jaws of various lengths can be made to fit the clamps. (K-3344) *C. H. Willey, Penacook, N. H.*

$5 to $10 for any Kink accepted for publication. Each one will be entered in the $25 and $500 prizewinner contest.

Send in your Kink now.

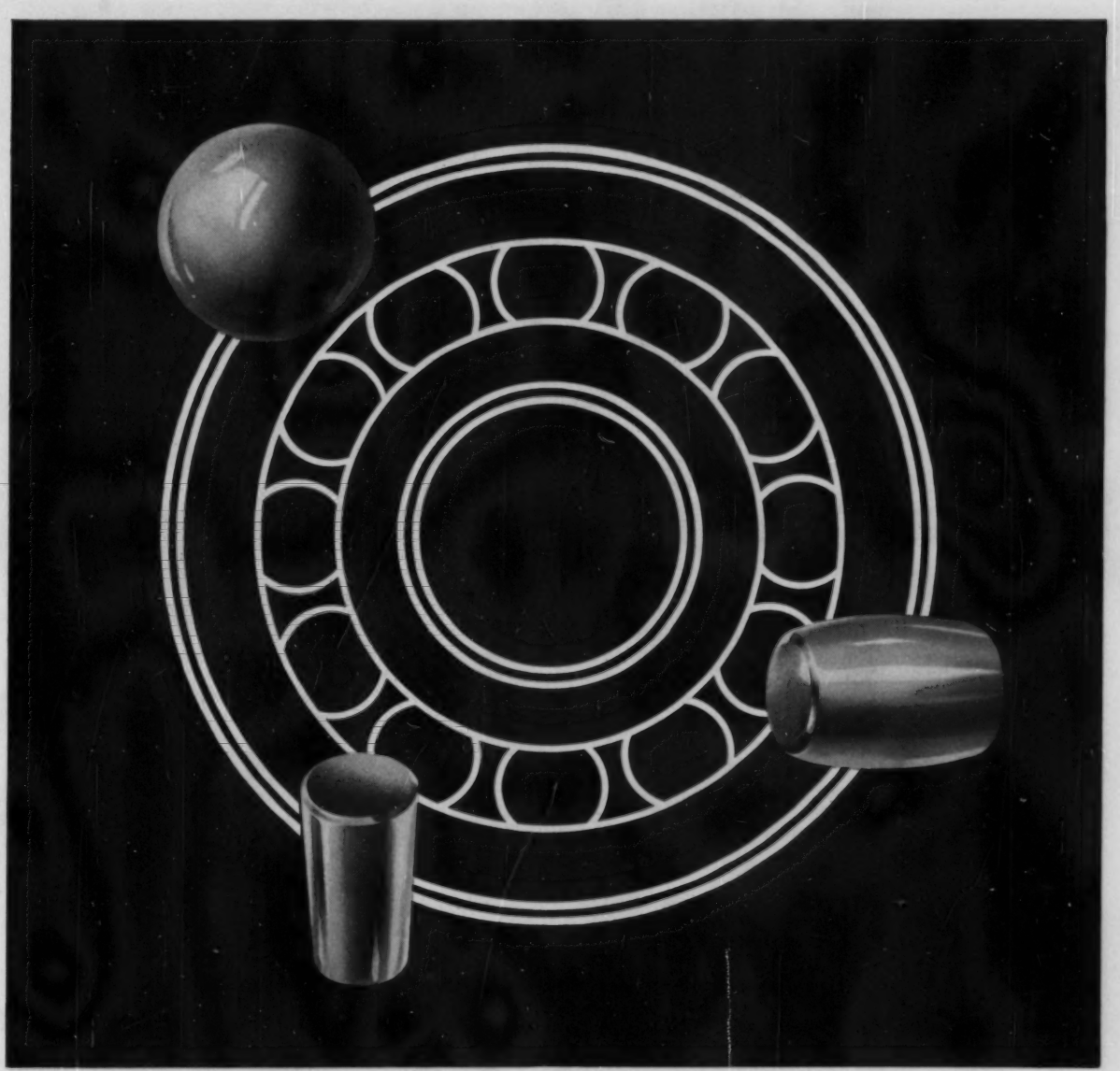


Beam-Gudgeon Adapter Is Made From Length of Pipe

We have been running two different types of beams on our C&K looms. To do this, we use pieces of galvanized water pipe of suitable length slipped over the beam gudgeons.

The warp, after it is placed on the let-off bearing, is held up until a 2-in. section of pipe is slipped over the gudgeon and into the sleeve bearing. The pipe is locked in place by the regular collar.

At the left side, the section of pipe is fitted onto the gudgeon and locked fast by the bearing cap. (K-3058) *Arthur Abbott, Berwick, Pa.*



cut bearing maintenance . . . with one lubricant

Nebula EP – another first for Esso Research – is a multi-purpose grease that *out-performs* all other multi-purpose greases. And many specialized greases as well!

Nebula EP works exceptionally well in ball, tapered roller and roller bearings – of *all sizes* from rolling mills to precision instruments.

Nebula EP stands up under extreme heat. It retains its lubricating qualities at high temperatures at which many special heat-resistant greases would have broken down.

And Nebula EP has exceptional water-resistant and rust-preventive properties – an important consideration where water is a factor. What's more, Nebula EP is formulated with a true soap which gives it extra anti-wear and load-carrying characteristics – for an extra margin of protection. High oxidation stability gives Nebula EP longer life in storage and in use.

Nebula EP can be applied by *any* of the conventional methods. Get the whole story about this fine product . . . from your nearest Esso Standard Oil Company Division Office: Boston; Pelham, N. Y.; Elizabeth, N. J.; Bala-Cynwyd, Pa.; Baltimore; Richmond; Charlotte; Columbia, S. C.; Memphis; New Orleans.

FOR BETTER RESULTS

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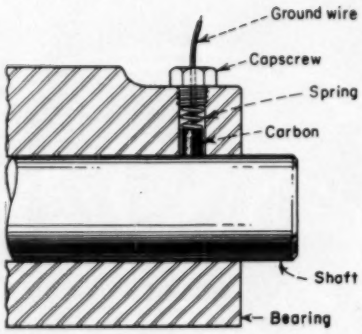
Handy Beam-Head Wrench Made From Socket and Rod

The usual type of capscrew wrench can be very unhandy in making adjustments to the beam heads at the slasher. An excellent wrench for this purpose can be made from a socket and a length of steel rod.

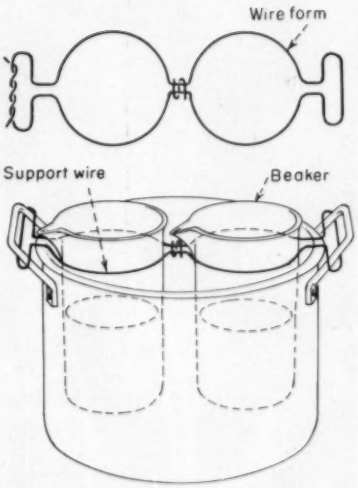
Obtain a socket of the correct size to fit the beam-head setscrews. Weld the socket to a rod long enough to extend beyond the beam head, and bend the end at right angles to form a handle. If desired, a hole can be drilled in the handle end so that the wrench can be hung out of the way when not in use. (K-3027) *H. E. W., Berwick, Pa.*



Avoid Static Electricity By Grounding Machine Shafts

Sometimes static electricity on textile machinery is a problem. The machines can be grounded, but often the minute charges of electricity in the revolving shafts interfere with lubrication. The lubricant acts as insulation until broken down, which makes the stationary ground useless.

A ground for these revolving shafts can be made by inserting a piece of carbon in the bearing, as illustrated, with a spring holding it firmly against the shaft. A ground wire from the carbon to the machine frame or machine ground will take the static out of the shaft. (K-3264) *W. E. Warner, Essex, England*



Coat Hanger Makes A Good Beaker Support

A useful auxiliary water bath can be made from a common kitchen pot and some stout wire, as shown in the sketch. In this case, the pot is 9 ins. in diameter and 5 ins. deep, but any available utensil will do if it can carry beakers of the wanted size. Wire of the type used in coat hangers is satisfactory for the purpose. (K-3333) *Hokao, Fukaya, Japan.*

$500 for Best Kink in 1957 - - - $25 for Best Kink Each Month

Plus $5 to $10 for Every Kink Accepted

What Is a Kink?

Any idea that will

- Cut costs
- Improve quality
- Reduce work
- Increase production
- Make work easier

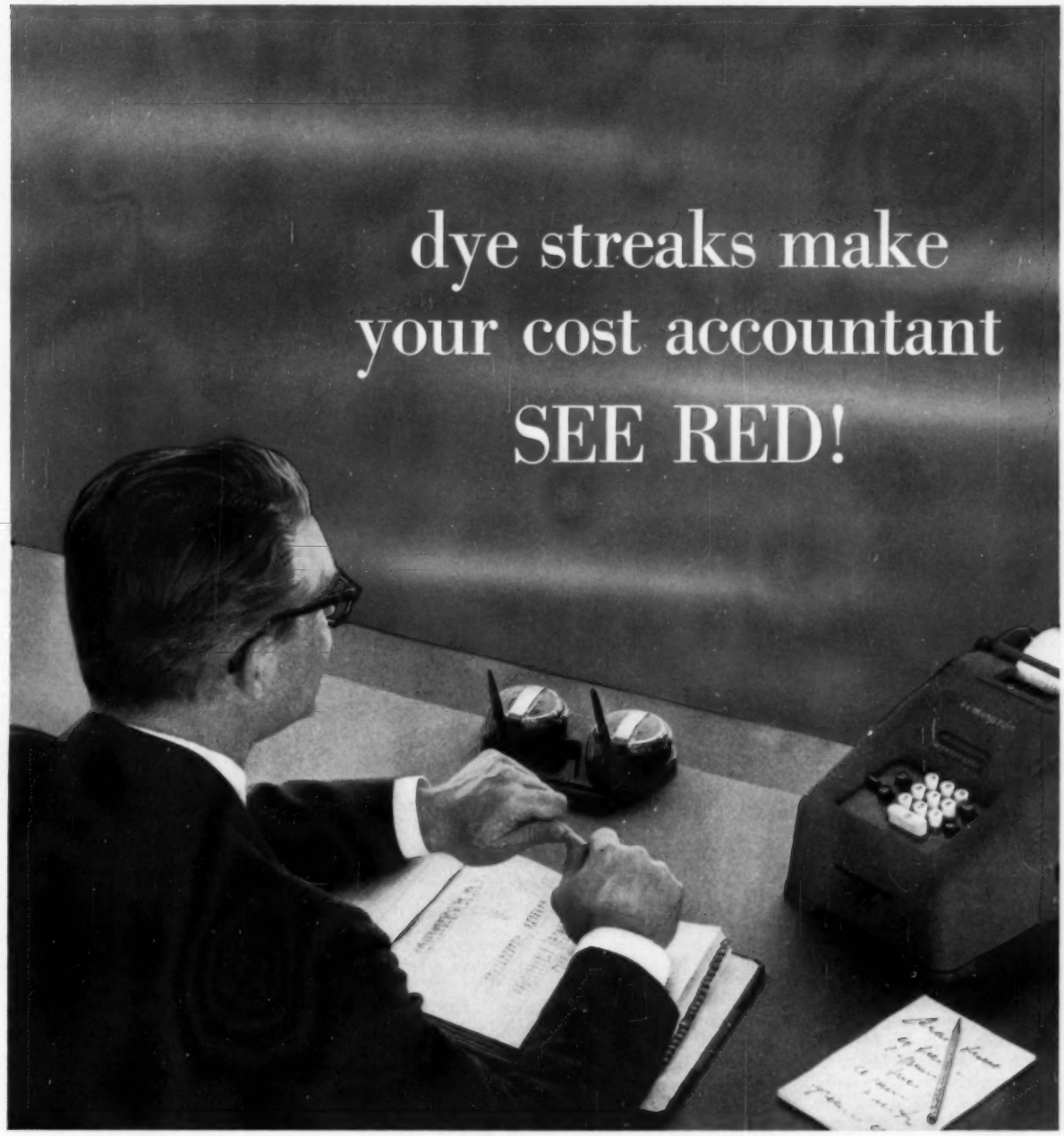
The idea may be one for improving machines, some attachment for a machine, a short-cut way of doing something, a labor-saving device—any idea at all that helps a mill man run his job better or easier.

Send in your Kink now. There is always a contest going on.

RULES OF CONTEST

1. No limit to number of entries.
2. New $25 prize contest every month, $500 prize contest for the year. Monthly contest confined to Kinks published that month, yearly to those published in calendar year 1957.
3. All Kinks paid for on acceptance; extra payment for photographs. Drawings need not be finished (clear detailed pencil sketches will do).
4. Previously published material not eligible for prizes.
5. Unless you advise to contrary, we assume we may sign your name to Kink when published.
6. Prize winners will be selected by readers, a different group each time. At least 300 will be asked to select preferred Kinks in each issue. Their votes will select the best Kinks, and their decision will be final. In cases of ties, duplicate prizes will be awarded.

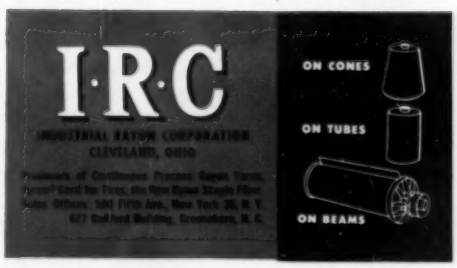
Send Kinks to:
KINKS CONTEST, TEXTILE WORLD
201 E. Coffee St., Greenville, S. C.



Your cost accountant is truly a fortunate fellow—he works with only *two* colors. Red is bad, black is good.

But now IRC Continuous Process Rayon can make all *your* color-work good—in fact, nigh on to perfect! The reason: Continuous Process Rayon is the only yarn spun, bleached, washed, dried, twisted in one continuous sequence. It's so uniform, every inch dyes the same as every other inch...evenly, with the same color density.

That's why IRC Continuous Process Rayon is the first choice of critical-fabric weavers. Seconds are cut down drastically. Yet it costs no more than ordinary rayon. Specify IRC for your rayon needs.



Use IRC Continuous Process Rayon...uniform mile after mile . . . perfect inch by inch . . . and it costs no more!

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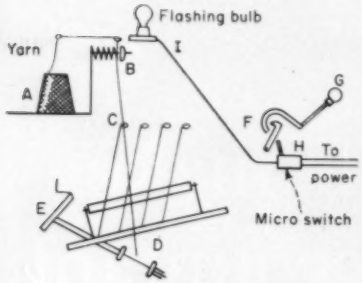


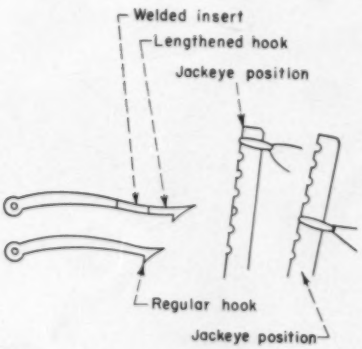
Signal Light Reduces Quill-Winder Downtime

Our automatic Hacoba parallel quill winder used to be shut down 25% of the time while the operator was attending to other duties. She could not tell when the machine knocked off unless she was watching it closely.

I solved the problem by installing a RW80BZ Micro switch on the winder clutch, which works as follows:

The yarn supply cone *A* releases yarn through tension brake *B* and stop motion *C* to the revolving quill *D*. When the yarn breaks, lever arm *E* is actuated by the stop-motion tension and disengages a clutch arrangement *F*.

The Micro switch was installed at the clutch. When the yarn breaks, a flashing bulb *I* signals the operator that the winder is not operating. The operator repairs the break and then engages the clutch by moving lever *G*. The machine starts up, and the switch opens again. (K-3280) *Paul H. Goldenberg, New England Woven Label Corp., New York.*

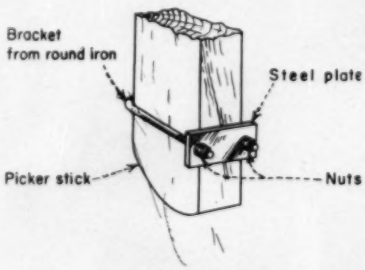


Alternate Harness Is Timed With Lengthened Dobby Hook

We noticed that tabby weaves on our looms equipped with Knowles heads ran much better than on looms with dobbies. This action was attributed to the split or alternate harness timing on the looms with Knowles heads. So we cut some of our hooks on the dobby looms and welded in a half-inch piece of metal to make them longer.

On a four-shaft tabby weave, we put one long hook on the first jack back and another on the third so that the warp is divided where the shed is closed or where harnesses cross. In this way, we alternate harness timing.

The jackeyes should be placed a few notches higher on the dobby jacks with the long hooks so that they will be even when the shed is fully closed. This method can be used on tabby weaves with more than four shafts if desired. (K-3276) *Joseph Kuginskie, Shamokin, Pa.*



Clamp Is Used To Reinforce Picker Stick

Formerly, picker sticks on the dropbox end of our looms had a reinforcing bolt in the bottom to prevent them from splitting. The hole for this bolt weakened the stick and sometimes caused it to split.

Now, we order the sticks without this hole and we bolt a V-shaped bracket to the stick to reinforce it. The bracket, closed with a piece of flat iron, has two nuts on each end to prevent it from working loose. The bracket has increased the service life of our picker sticks. (K-3331) *Janos Kovesi, Sao Paulo, Brazil*

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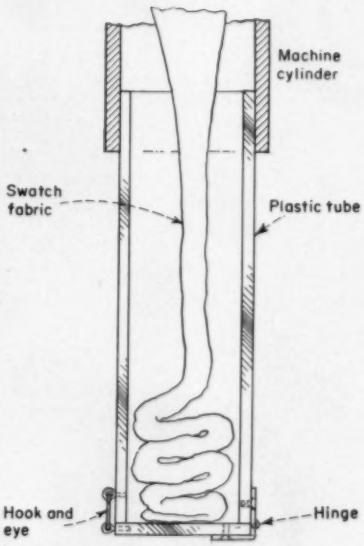


Collect Hosiery Fabric In a Plastic Tube

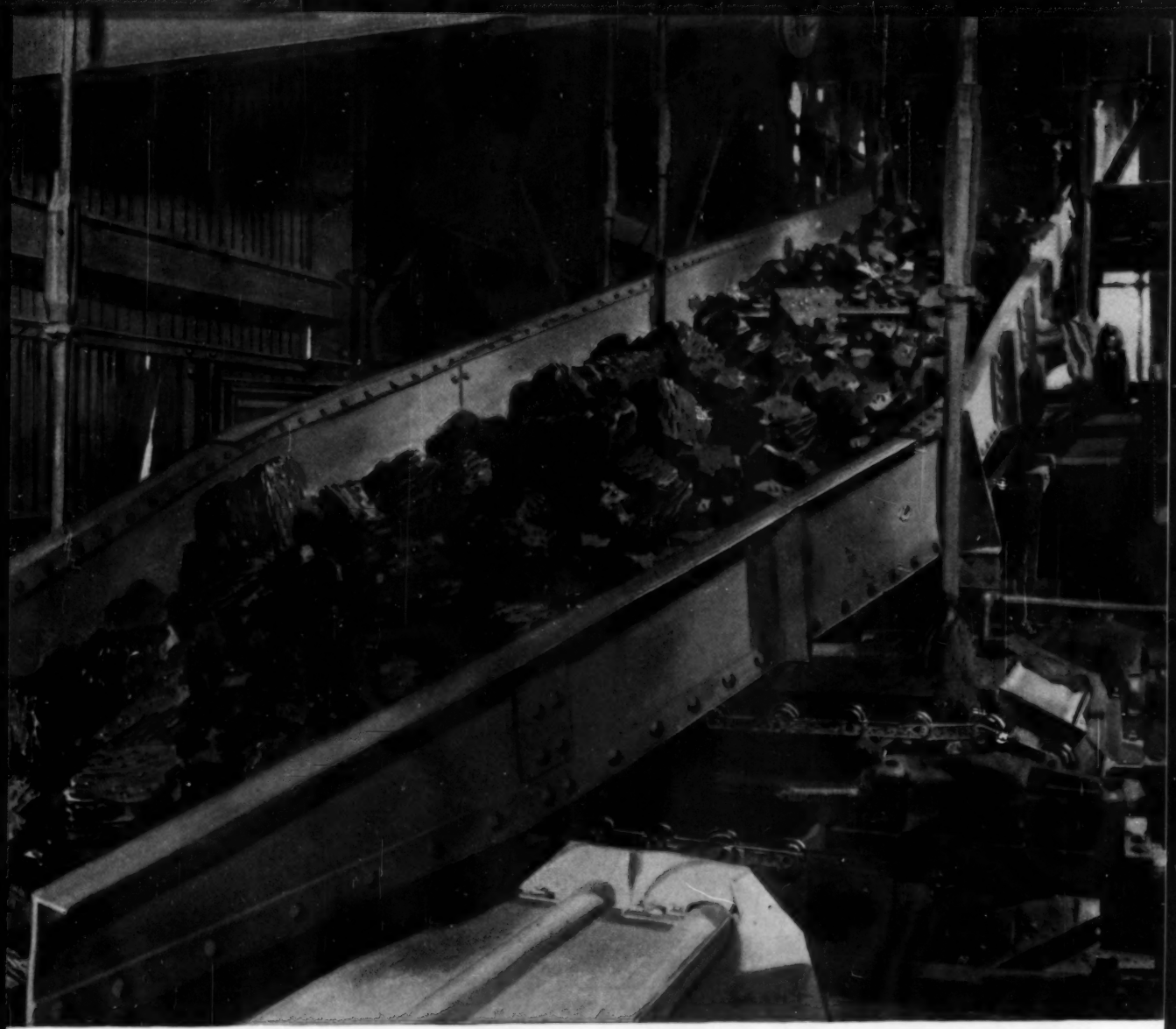
We use one of our men's hosiery machines to make fabric for swatches. Frequently, the knitted fabric gets twisted up; so we made a tube to collect the swatch.

The tube, made from transparent plastic, fits tightly inside the cylinder. We can see when the container is full, and a hinged door at the bottom of the tube permits the fabric to be pulled out when the tube is full. We make sure that all the screws are filed flush with the tube so that they will not catch the fabric. (K-3010)

How To Drill Large Holes With a Small Drill

Drilling large holes in steel with a small electric drill is often a hard job, and it is also hard on the drill. Although some larger drills have a reduced shank to fit a ¼-in. drill chuck, the recommended speed of larger drills is less than the speed of most ¼-in. electric or air drills.

To prevent overloading the motor and damaging the point of the drill, we found it better to use drills of increasing sizes. For a ½-in. hole, for example, we first use a ⅛-in. drill; then we consecutively use ¼-, ⅜-, $\frac{7}{16}$- and ½-in. drills. (K-3204). *Walter A. Simond, Washington, D. C.*



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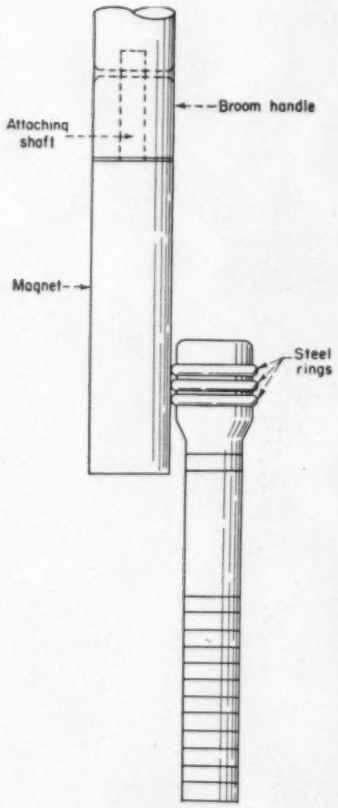


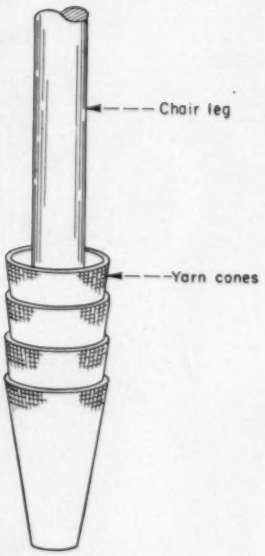
Pick Quills Off the Floor With a Magnetic Tool

Quills dropped on the floor at one mill used to be picked up with a wire rod. The rod was also used by the sweepers to rake quills from under the looms.

Now we pick up quills with a magnetic-recovery tool. The magnet is 4 ins. long and 1 in. in diameter. It has an attaching shaft that we fasten to a regular broom handle.

Use of this tool speeds up the retrieving of quills from under the looms. When the magnet is placed near a quill, the steel rings are attracted and several quills can be picked up at one time.

The magnet is strong enough to pick up broken loom parts and other small metallic objects. (K-3236) *Ashton H. Cary, LaGrange, Ga.*

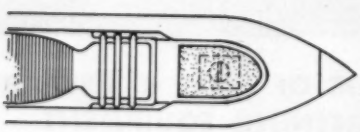


Adjust Chair Height With Discarded Yarn Cones

In some mill operations, the employees sit in chairs. Many of these chairs are not adjustable for height, and the efficiency of the employee is affected.

We found a simple method for increasing the height of the chairs: Just seat a number of discarded yarn cones, one into another, and place the chair legs in the top cone.

The height of the chair can be regulated by adding or removing cones. (K-3057) *Arthur Abbot, Berwick, Pa.*



Use Steel Wool To Polish Snick Plates on Spooler

When you are overhauling the snick plates on Barber-Colman automatic spoolers, it is desirable to polish the two holes that the shafts fit in. It is important that the polishing agent does not cut and enlarge the holes.

A piece of fine steel wool wrapped around a $\frac{5}{16}$-in. bit running in an electric drill will give these holes a fine polish. The same method can be used on many other cleaning jobs; and if some cutting is desired, a piece of emery cloth instead of steel wool will do the trick. (K-3087)

Use Strips of Tape To Hold Spring-Cover Screw

We had many smashes on our looms caused by screws becoming loose on the shuttle-spring covers. Many attempts were made to eliminate the trouble before we finally solved the problem this way:

We stuck a piece of $\frac{1}{2}$x$\frac{5}{8}$-in. surgical tape to the head of the screw. Next, we covered the surgical tape with a piece of plastic tape large enough to overlap the other piece of tape on all sides.

If a screw becomes loose, it pulls the tape loose. This action makes it easy to detect and tighten the screw before any damage is caused. (K-3233) *Albert Szczur, New Bedford, Mass.*

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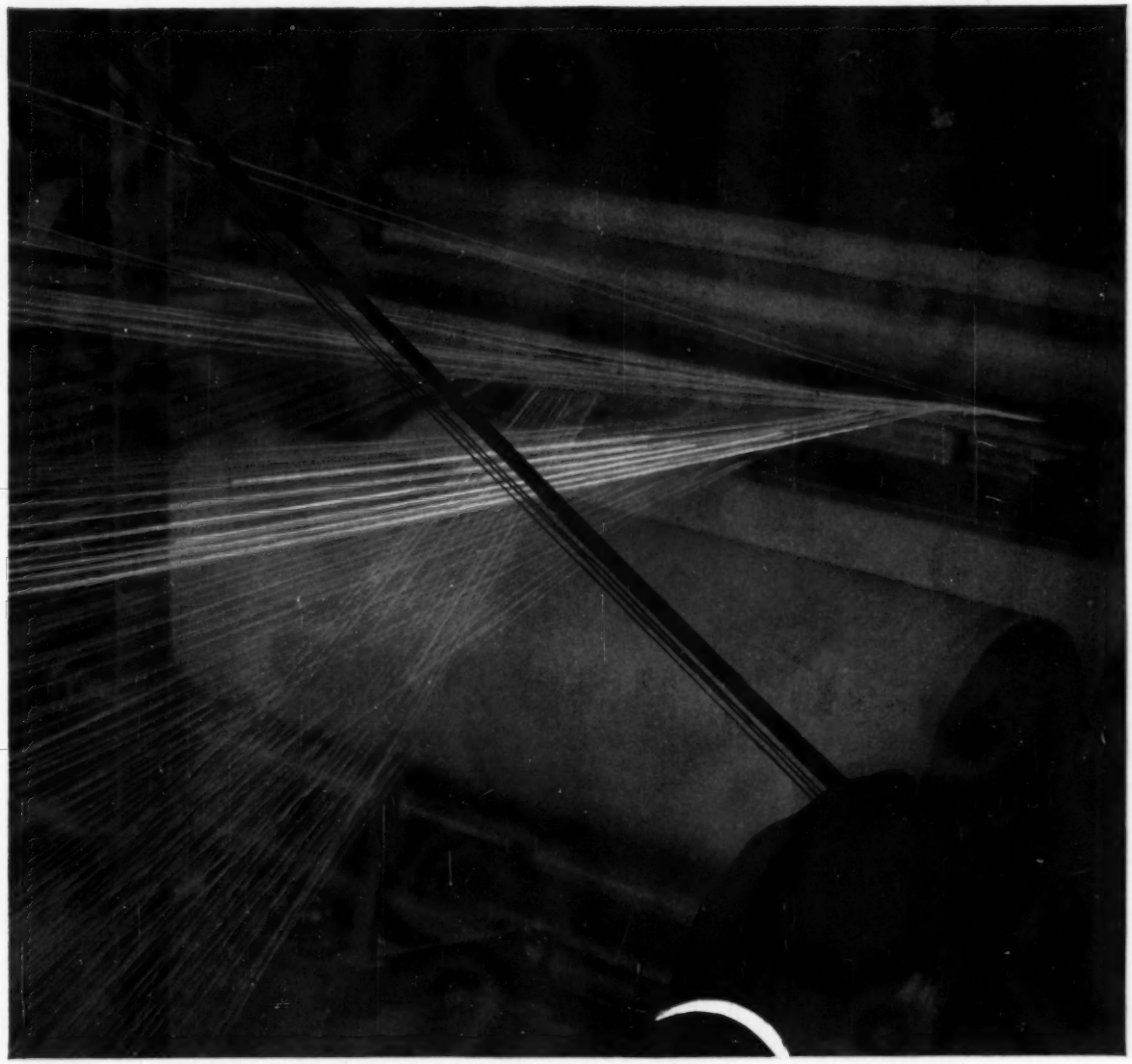
Plush-Covered Underclearers Keep Rolls and Necks Clean

Roll necks and front steel rolls used to be very hard to keep clean in our mill. The regular cotton covering on the underclearers was not effective, and we spent too much time cleaning rolls.

Finally we put a heavy piece of plush on the underclearers of one frame, and the result was almost miraculous. Once clean, the rolls and necks stay clean indefinitely and never have to be touched by the spinners. The small investment pays for itself every week in cleaning time saved. (K-3400) *Gerald Maillou, Magog, Que.*



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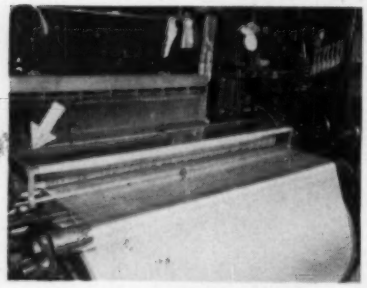


Plastic Cover for Looms Keeps Drop Wires Clean

Many of our fabrics are loom-finished and others are woven in light shades; so we have to do everything possible to keep our cloth clean in the weave room.

One method that has been very effective in keeping cloth clean is to cover the drop wires at the loom to keep out dirt.

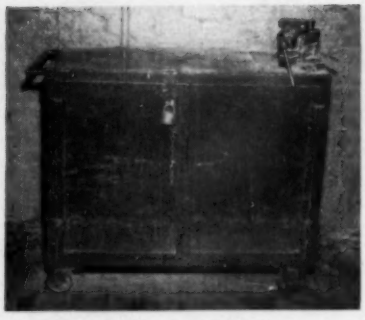
The cover is made from a light framework of strap iron covered with transparent plastic, as shown by the arrow in the photograph. The four pieces of upright framework are curved at the bottom so that the curved portions fit on the two outside separator bars of the warp stop motion.

Therefore the entire cover can be lifted off the drop wires if a weaver needs to draw in several broken warp ends. One or two ends can be drawn in without disturbing the cover. (K-3460) *Schwarzenbach Huber Co., Altoona, Pa.*

Old Light Bulb Makes Good Water-Level Indicator

We had trouble keeping our fire buckets filled, and it was hard to tell how much water was in the buckets without close inspection.

We've found a simple way to tell when the water level is low. An old burned-out light bulb is dropped into each bucket and it floats on the surface of the water. When the bulb cannot be seen above the rim of the bucket, we know the water level has dropped, and we put more water in the bucket. (K-3418) *Joseph Hagl, Philadelphia, Pa.*



Workbenches on Wheels Aid Weave-Room Cleaning

Loomfixers' workbenches are usually filled with heavy loom spare parts, bolts, nuts, and loom gauges. Consequently, the benches are too heavy to move easily during routine cleaning and the area under and around workbenches is usually dirty.

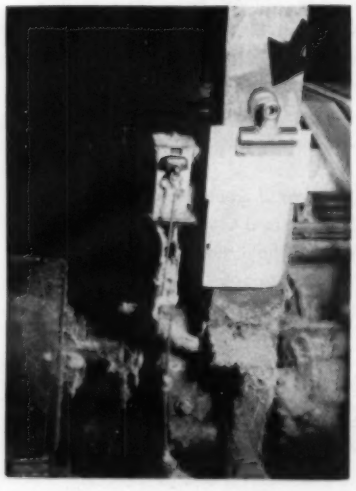
We have mounted all our workbenches on casters so that the sweepers can move them easily for cleaning.

The workbenches are welded from angle iron and sheet steel. The inside is divided into sections by shelves, and two doors are hinged to the front. Each loomfixer on the three shifts has a key to a padlock on the doors; so supplies are protected.

A handle is welded to one end of the workbench so that it is easily guided when it is moved.

A vise is bolted to the top of the opposite end of the bench. Since loomfixers file or saw objects in the vise against the direction of wheel travel, the bench holds steady.

Now our weave room can be cleaned completely every time the sweepers make a cycle. (K-3487) *Avondale Mills, Alexander City, Ala.*



Paper Clamps Hold Style Tickets to Looms

Style tickets for cloth are usually hung on hooks attached to loom arches. Loom vibration sometimes jars the tickets loose, and they fall in the warps and make break-outs or are lost.

We have eliminated this trouble by attaching the tickets in spring-type paper clamps. One arm of a clamp is bolted to the loom by the side of the warp over the loomside, as shown by the arrow in the photograph.

The clamp holds the style tickets securely and also holds notes sent from the cloth room when a loom is making a cloth defect. (K-3453) *Avondale Mills, Alexander City, Ala.*

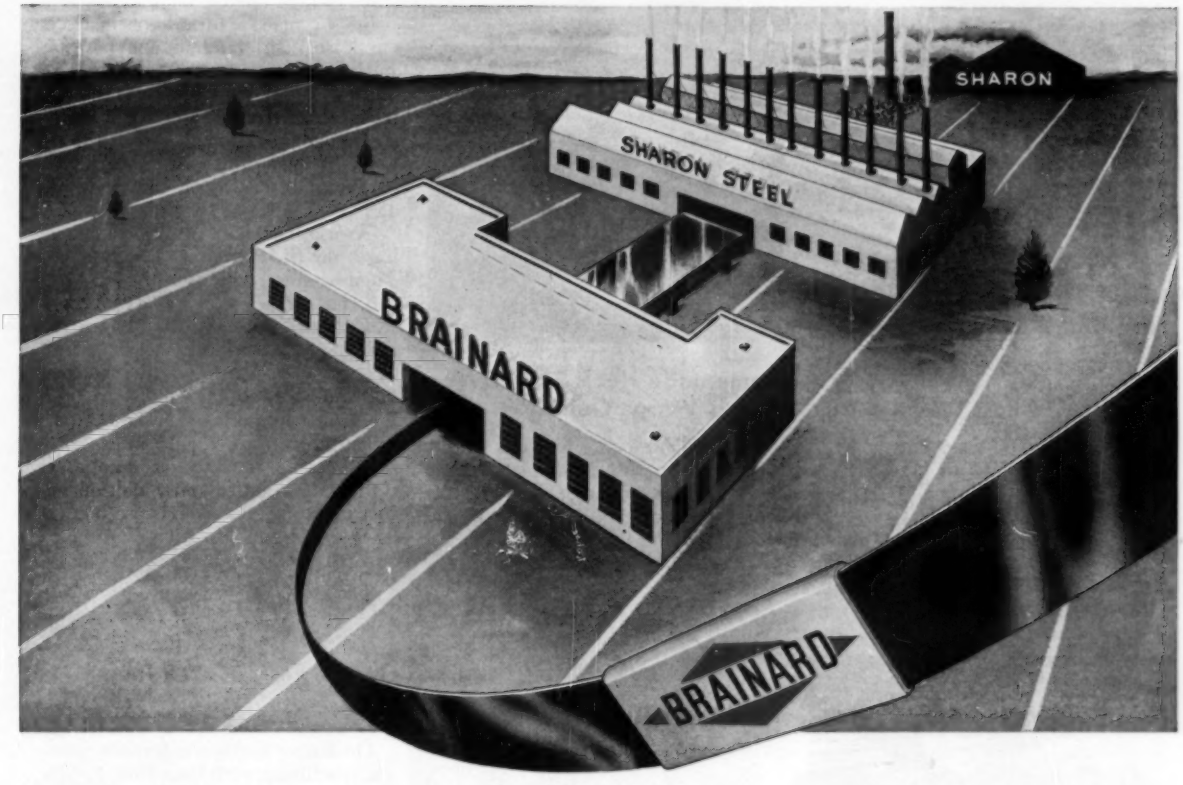
Pick Up Stitches On Rib Machines

In running lightweight fabric on rib machines where a number of the needles have been removed, such as for panel fabrics and swiss rib, several yards of fabric are often wasted after a press-off before each needle picks up its own stitch.

To divide each loop with a hook is a long, tedious job. Instead, we raise the fabric take-up slightly, and this action causes tuck stitches that divide the loop.

The same technique can be used to throw off the loops after a press-off to clear the needles. (K-3305)

Another Plus...from Brainard



"INTEGRATION" An Extra Assurance of Quality in Brainard Steel Strapping . . .

The word integration has a special meaning in the industrial vocabulary. An integrated company has come to mean one that gives something extra in quality, delivery, and performance.

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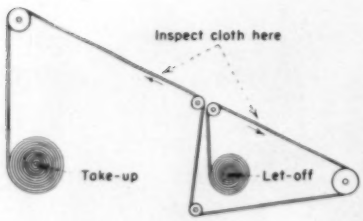
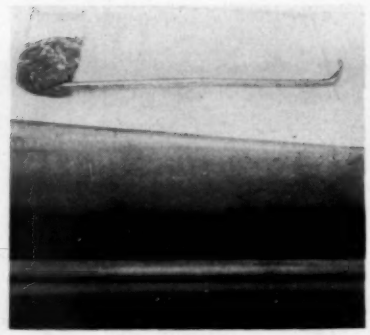


How To Inspect Cloth's Face and Back Simultaneously

Some fabrics have to be inspected on both face and back. Normally, this procedure would involve two inspecting operations. We made a cloth-inspecting machine that shows both sides of the cloth at one time. The arrangement of the rolls is shown in the sketch. (K-3207) *Angel Chaufan, Barcelona, Spain.*



Homemade Hook Pulls Over Retied Warps Quickly

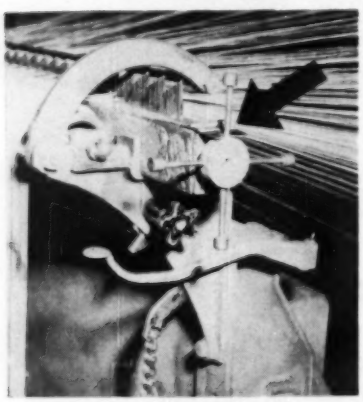
We tie most of our warps in the weave room with portable tying-in machines. Several models of Draper looms are used; and we formerly had trouble pulling the knots through the drop wires, harnesses and reeds.

But we made a little hook that lets our lease man stand in one position and pull a warp completely over. The hook is made from a ⅜-in. round steel rod 16 ins. long. One end is bent to an 80° angle. The other end is bent to a 90° angle and is inserted into a hardwood block, which makes a handle.

To use the hook, the lease man releases the friction on the Roper let-off. Then he goes to the front of the loom and starts it.

The steel hook is used to turn the Roper let-off and pull the pick wheel in the take-up-gear train alternately to pull the knots through quickly.

With this method, a warp can be pulled over in less than 5 mins. without breaking an excessive number of warp ends. Consequently, efficiency is increased, and fewer ends are broken. (K-3488) *John P. King Mfg. Co., Augusta, Ga.*



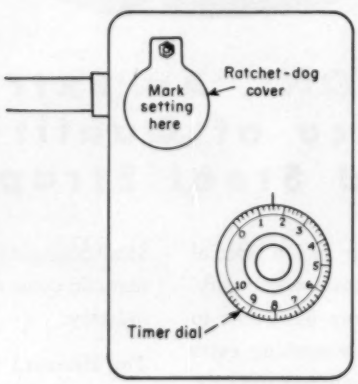
Attachment Stops Warper Comb From Backing Off

We were having trouble with our warper combs backing off after the warpers were creeled and started. This action caused bad selvages at the beam heads.

We stopped the trouble by drilling two holes on opposite sides of the comb-adjusting knob and putting two rods through these holes. Then we welded a small flat piece of metal to a 1¾-in. hinge. Next, we cut a slot in the metal to fit the rod and fastened the hinge (arrow) to the top of the warper comb.

This arrangement permits the slotted piece of metal to fit over the rod and keep the comb from moving once it is set. (K-3360) *R. G. Watson, Bemis Cotton Mill, Bemis, Tenn.*

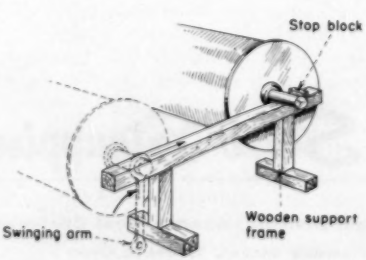
Mark Proper Setting on Spooler Timer



On Barber-Colman automatic spoolers, conditions arise from time to time that require changing the setting of the time dial. Confusion will result if someone inadvertently returns the dial to an improper setting.

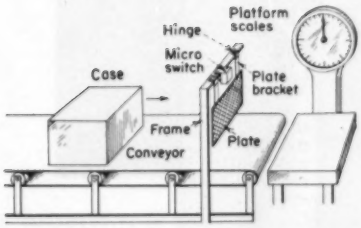
This trouble can be avoided by scraping the paint from the KKO 75 ratchet-dog cover and writing the proper setting for the timer dial on it with a grease pencil. Of course, the setting could be stenciled on with paint, but since these settings change from time to time, the grease pencil gives very good results and the writing can be rubbed off easily when necessary. (K-3083)

Swinging Arm and Frame Make Doffing Beams Easy



Our rayon slasher beams are very heavy, and we formerly had much trouble in doffing them. A swinging arm and wooden support at each end of the beam now makes doffing easy.

The arms are placed on the beam journals and act as pivots to swing the beam onto the frames. The beam is then rolled to the back of the frame where it can be reached and removed by an overhead hoist. (K-3267) *Hokao Fukaya, Fukui, Japan*



Micro Switch Stops Conveyor Belt in Right Place

We have a conveyor belt to move our materials to the shipping platform. Each case must be weighed before shipping on scales at the end of the conveyor line.

To stop the case when it reaches the scales, we placed a Micro switch over the conveyor near the scales. A wire-mesh plate, which hangs in the path of the moving cases, was fastened to a frame over the conveyor.

When the plate is raised, it presses the switch button and the switch stops the conveyor-belt drive.

We had to experiment with the position of the frame until we found a spot where the switch would stop the case right on the scale. (K-2995)

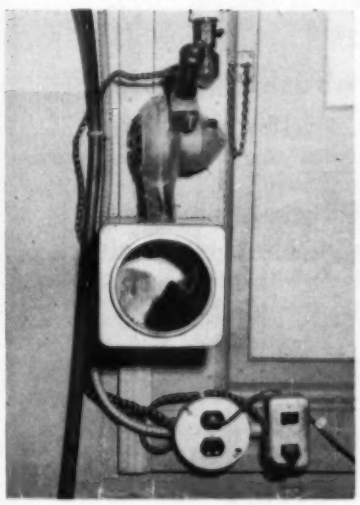
How To Make a Knife That Can't Damage Fabrics

A substantial number of rolls of fabric had been damaged from the use of shoemaker's knives in our receiving room. The sketch shows a package-opening knife we made after discarding many different models.

In use, the paper-wrapped full-width or folded-width bolts are struck a sharp blow with the handle of the knife at the end of the package. This breaks a hole into which the nose of the knife is inserted. One thrust slits the wrapping straight across to the other side. Rope may be cut by hooking on trailing side of cutter.

The blade is made from discarded straight knives used by cutters, and the excellence of the steel gives a long-lasting edge to the device.

Though no object of beauty, the knife performs very well and cannot dig into the fabric. (K-2813) *Robert Friedlander, Chicago, Ill.*

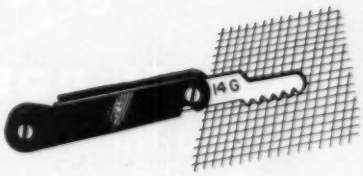


Hair Dryer and Dye Can Make Sample Dryer

An inexpensive and efficient sample dryer for the dyehouse office can be made from an empty 5-lb. square dye can and a hair dryer.

The dryer we use has a 110-v. heating coil and can be plugged into any handy 110-v. outlet. A hole is punched in one side of the dye can near the bottom, and the nozzle of the dryer is inserted in the hole. Both units are fastened to a board that can be mounted in any handy place.

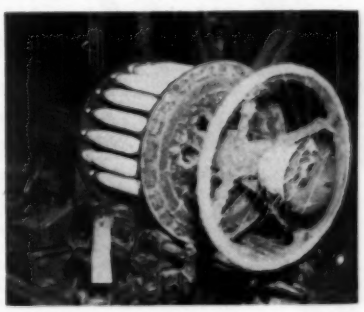
The dryer is especially good for drying synthetics and does not develop enough heat to overdry the sample. (K-3462)



Count the Ends in Cloth Samples with a Thread Gauge

In checking the quality of cloth, it was necessary for us to count the warp ends and picks of filling yarn in a large number of samples. Continuous use of the pick glass is very tiring; so we discarded it for counting the ends in coarse cloth.

We now use a thread gauge for checking the samples. The gauge is accurate enough for our purpose, and its use is much faster than counting with a glass. English or metric thread gauges can be used, with each tooth covering one, two, or more picks at a time. (K-3263) *Josef Friedlander, Israel.*



Small Tickets at Loom Eliminate Mixed Filling

Fabric styles come and go fast at our mill, and therefore we run many types to filling yarn. To eliminate mixed filling, we mark each loom to show our batteryhands the type of filling to use.

The filling yarn number, ply number, yarn type, and color are written on a shipping ticket with a wire tag. The wire tag is fastened in the loop of the cotter pin in the transferer stud of the loom battery.

Without moving from her normal position of plugging a battery, a batteryhand can glance down and check the ticket to be sure she is using the correct filling. Now mixed filling has been all but eliminated. (K-3461) *Avondale Mills, Alexander City, Ala.*

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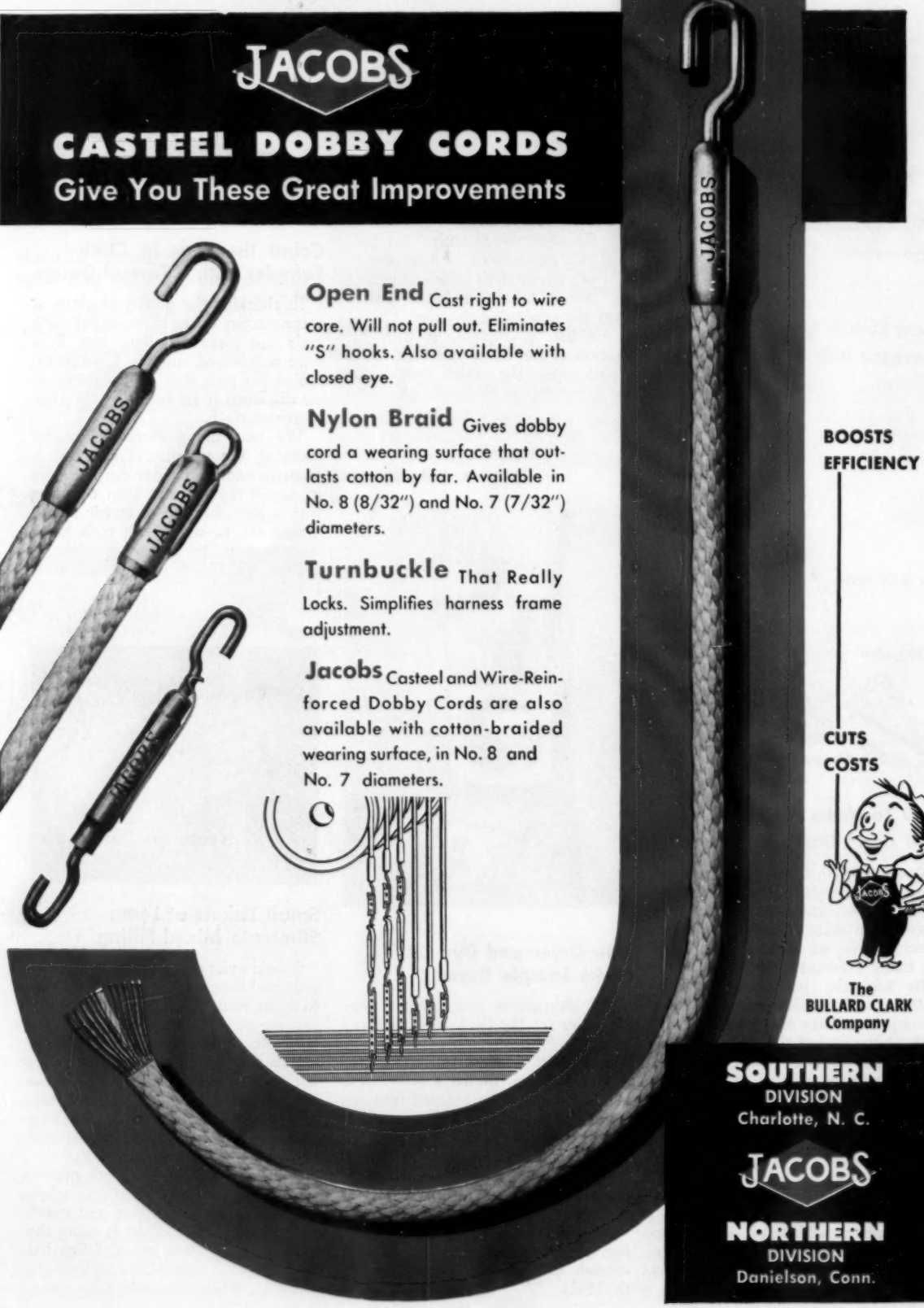

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NEW DYES AND CHEMICALS:

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TEXTILE WORLD, A McGraw-Hill Publication, New York 36, N. Y. June, 1957

Outstanding NEW LITERATURE *Free for the Asking*

NO REPEATS . . . Listed here for June are current bulletins reviewed by the editors of TEXTILE WORLD. To get the ones you need, circle the number on the Reader-Service card, as described on the preceding page.

TEXTILE MACHINERY & AUXILIARY EQUIPMENT

Lubricator—For card-flat chains. Improves performance of cards, cuts maintenance. W. G. Jarrell Machine Co. (F-1)

Tension meter—Checks tensions in warping, winding, throwing, slashing, other operations. Various ranges. Tensitron, Inc. (F-2)

Mending machine—For repairing runs and pulled threads on seamless and full-fashioned hose. Air operated. Stanford Marley Distributing Co., Inc. (F-3)

Transfer-applying machine—Automatically applies transfers to hosiery at toe, heel, and sole. Produces 1,200 to 1,500 doz. per day. Southern Mill Equipment Corp. (F-4)

Stitch gauge—Sets draw of stitch on all latch-needle knitting machines quickly, insures uniformity of stitch between machines. The Knitmaster Co. (F-5)

Automatic spraying machine—Applies finishes, paints, lacquers by moving spray across face of goods. DeVilbiss Co. (F-6)

Picker aprons, beater lags—For all types of pickers, waste machines. Smith Textile Apron Co., Inc. (F-7)

Band-stamping machine — Automatically imprints up to 4,500 impressions per hour on up to three 15-mm. bands made of any textile material. O. Hebestreit & Co. OHG. (F-8)

Yarn guides—Ceramic shapes of all kinds used in creeling, winding, coning, other textile operations. Heany Industrial Ceramic Corp. (F-9)

Jacquard knitting machine—Produces on a 32-in. dia. cylinder 8 to 13 ribs per inch with 12 feeders, 18 pattern drums. Automatic change to several types of stitch. Wildt & Co. Ltd. (F-10)

SUPPLIES & CHEMICALS

Polyamide tubing—Nylon-based tubing with good mechanical strength and high corrosion resistance. Available in ⅛- to ⅝-in. outside diameter in two pressure ranges, 1,000 and 2,500 psi. The Polymer Corp. of Penna. (F-11)

High-purity chloroform—For laboratory use where anhydrous chloroform is necessary. Available in quarts and gallons. Fisher Scientific Co. (F-12)

Laboratory equipment—General catalog of laboratory apparatus and furniture available from Schaar & Co. (F-13)

Metallic yarn—Applications and tips on handling fabrics containing metallic yarns in a booklet from Metlon Corp. (F-14)

Chemical news—Listings of chemicals, uses, interesting data on applications

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McGraw-Hill Publishing Co., Inc.

in folder from U. S. Industrial Chemical Co. (F-15)

High-melting-point grease—For bearings running at up to 250° F. or for sealed antifriction bearings running at normal temperatures. Bulletin 47. Sun Oil Co. (F-16)

Dichlorophene—Extensive literature on uses of this chemical as a fungicide. Technical Bulletin D-2. Sindac Corp. (F-17)

MAINTENANCE & ENGINEERING

Bearing metal—Babbitt metal made in five different hardness ranges. Bulletin lists applications, how to pour for best results. Joseph T. Ryerson & Son, Inc. (F-18)

Air filters—Up to 99.95% of atmospheric impurities are retained by filters described in Bulletin 120 from Cambridge Filter Corp. (F-19)

Temperature indicators—Temperatures at various points in manufacturing systems can be checked at a central point in these instruments actuated by thermocouples located at critical points. Data sheet ND46-33(23). Leeds & Northrup Co. (F-20)

Small pressure filters—For small plants, or auxiliary water supply. Remove oil, rust, other suspended matter. Capacities to 19.6 gals. per min. Cochrane Corp. (F-21)

Pilot valve—Diaphragm-actuated hydraulic pilot valve in 3 to 40 psi. control-pressure ranges. Controls main regulating valve. Atlas Valve Co. (F-22)

Roller-gear drives—For indexing operations. Smooth operation up to 2,000 rpm. Available in 3- to 12-stop models. Bulletin 107A, Ferguson Machine Corp. of Indiana, Roller Gear Div. (F-23)

Plate magnets—For attracting ferrous trash in materials being processed. Nonelectric units in many styles listed in Plate Magnet Bulletin from Eriez Mfg. Co. (F-24)

Right-angle bevel gears—For line drives in 5, 1, and 1/3 h.p. Available in 2-way, 3-way, and 2-to-1 or 1-to-1 shaft ratios. Bulletin 57. Airborne Accessories Corp. (F-25)

Flexible-actuator switch—Designed to be operated from any angle except a direct pull. Applications include stop motions, limit switches. Data sheet 113. Micro Switch Div., Minneapolis Honeywell Regulator Co. (F-26)

Control centers—Concentrate in one panel the control elements of air-con-

Add flexibility to your machines with low-cost speed control

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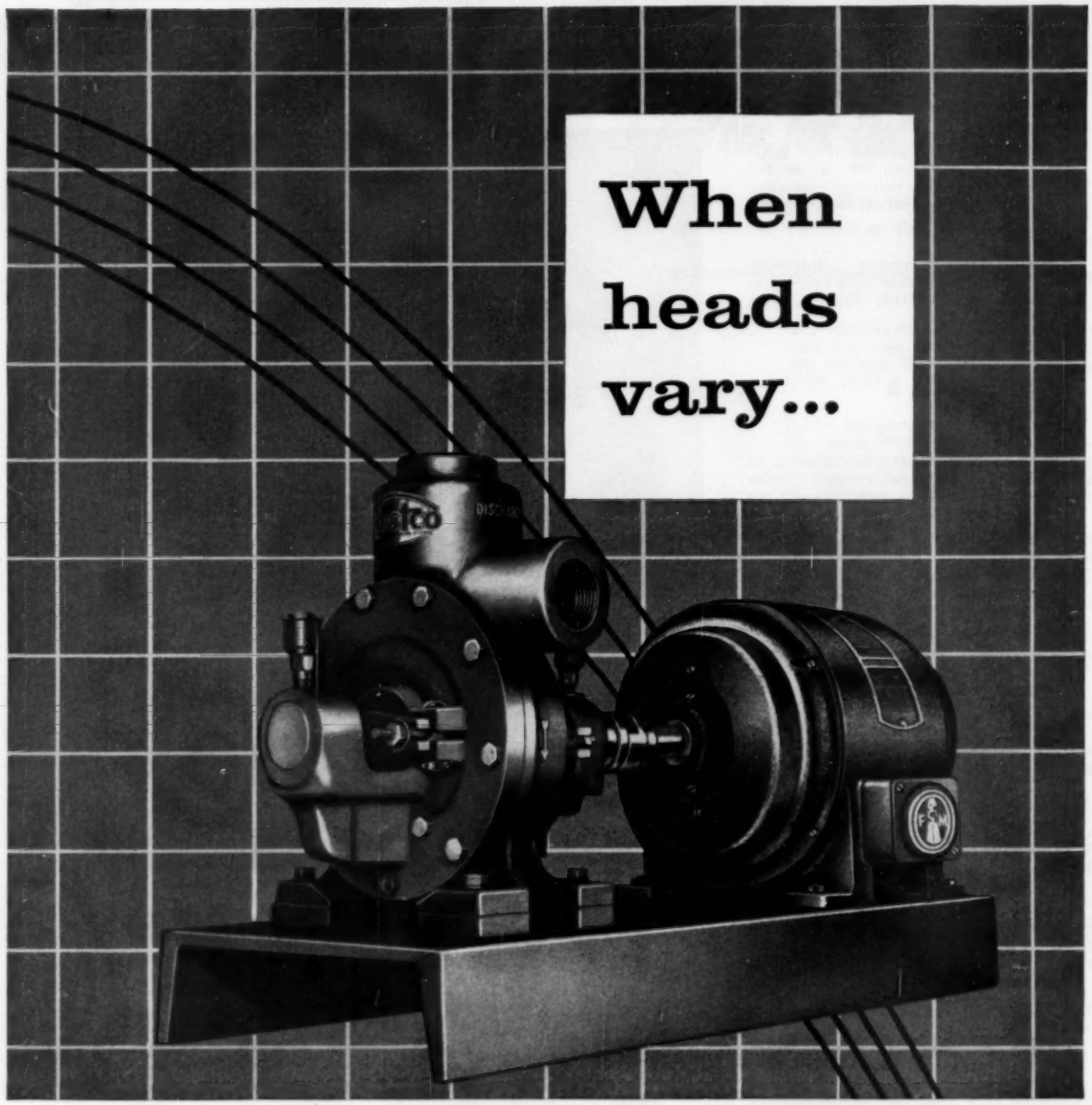

Install a Fairbanks-Morse Westco peripheral pump . . . and make sure of efficiency with little or no loss of capacity!

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You'll find Westco peripheral pumps ideal as integral parts of machines, units or systems . . . such as circulating hot water, ice water or brine . . . or for service on clear water, sump, solvents or chemical fluids, feeding filters or boilers, or as booster pumps. Capacities to 200 gpm., heads to 600 feet. For complete information and assistance contact your F-M Pump Dealer, or write today to Fairbanks, Morse & Co., Dept. TW-6, 600 South Michigan Avenue, Chicago 5, Illinois.

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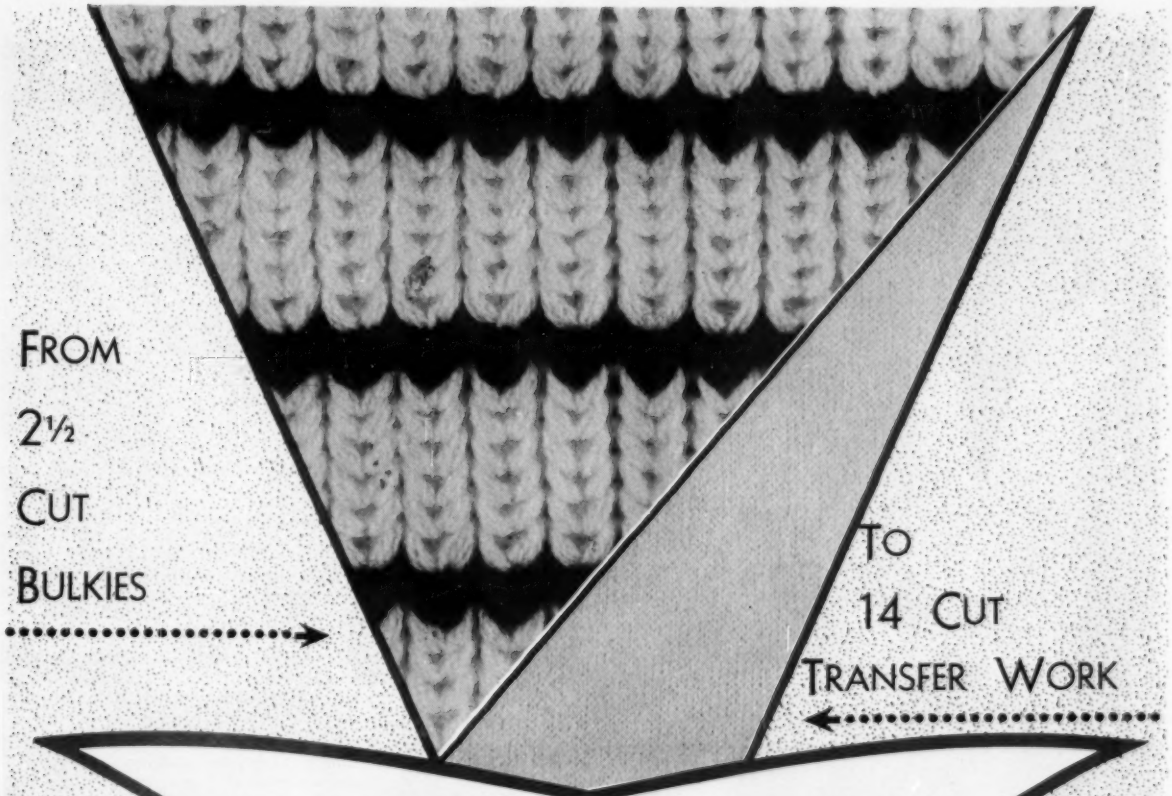

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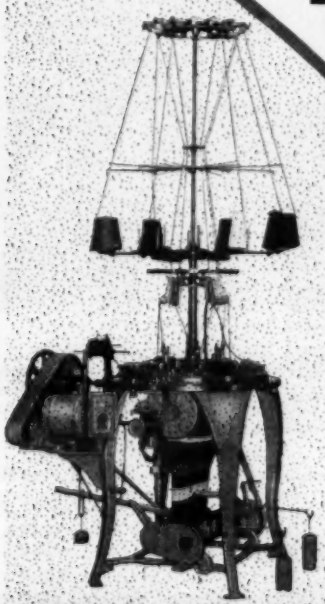
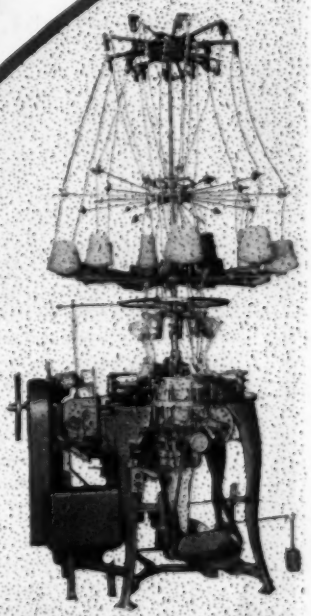
TO 14 CUT TRANSFER WORK

LEIGHTON

COARSE GAUGE MACHINES OR TRANSFER MACHINES

GIVE YOU SMOOTH LOW MAINTENANCE PRODUCTION & KNIT NEW SYNTHETIC YARNS AS EASILY AS WOOLS AND COTTONS





LEIGHTON MACHINE COMPANY

MANCHESTER, NEW HAMPSHIRE

MFGRS. OF CIRCULAR KNITTING MACHINES

MFGRS. OF CIRCULAR LATCH NEEDLE KNITTING MACHINES

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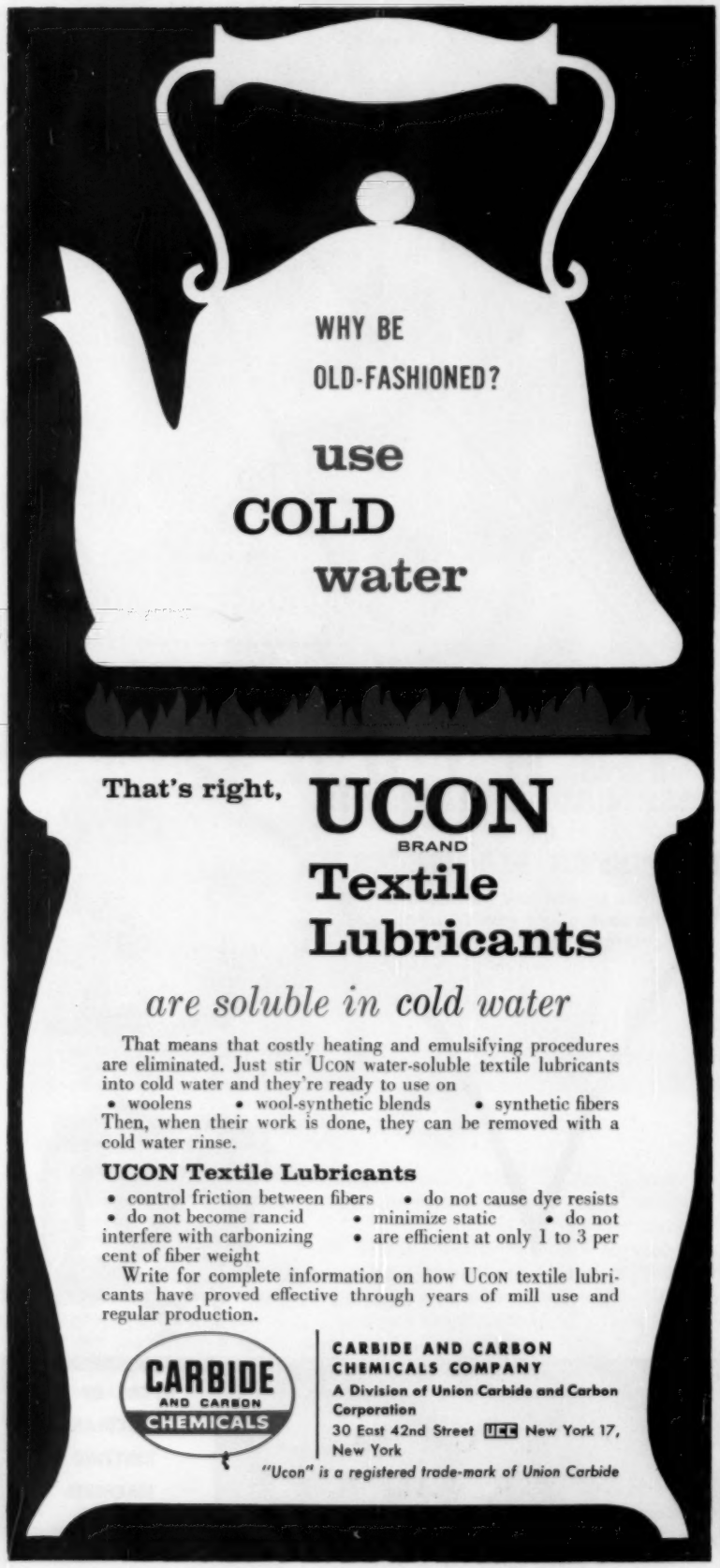
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That's right,
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are soluble in cold water
That means that costly heating and emulsifying procedures are eliminated. Just stir UCON water-soluble textile lubricants into cold water and they're ready to use on
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NEW LITERATURE Continued

ditioning systems in plants and offices. P. R. F-8031. Barber-Colman Co. **(F-27)**

Absorption refrigeration—For factories, office buildings; 100- to 700-ton capacities. Steam operated. Cat. 16C-8. Carrier Corp. **(F-28)**

Pumps—Turbine and centrifugal types in a wide range of capacities and drives described in brochure from Aurora Pump Div., New York Air Brake Co. **(F-29)**

Recording thermometers—Ranges from —125 to 1,000° F. in bulb and bimetal types, listed in Bulletin T840. Bristol Co. **(F-30)**

V-belt tips—How to diagnose power-transmission troubles in V-belt-drive systems. Worthington Corp. **(F-31)**

Rotameters—Armored models for high-temperature pressure operation, direct- and extended-reading models. Bulletin 130. Brooks Rotameter Co. **(F-32)**

Robot operators—Doors, gates, windows, awnings, and other equipment can be opened or repositioned by units described in Form G1 from Robot Appliances, Inc. **(F-33)**

Turret lathes—Floor and bench models, accessories listed in folder from South Bend Lathe Works. **(F-34)**

Textile motors—For looms, other textile machines. Totally enclosed fan-cooled motors, described in Bulletin 3526 from Diehl Mfg. Co. **(F-35)**

GENERAL

Pallet boxes—Reusable wire-bound pallet boxes in carrying capacities of 2,000 to 3,000 lbs. described in catalog from General Box Co. **(F-36)**

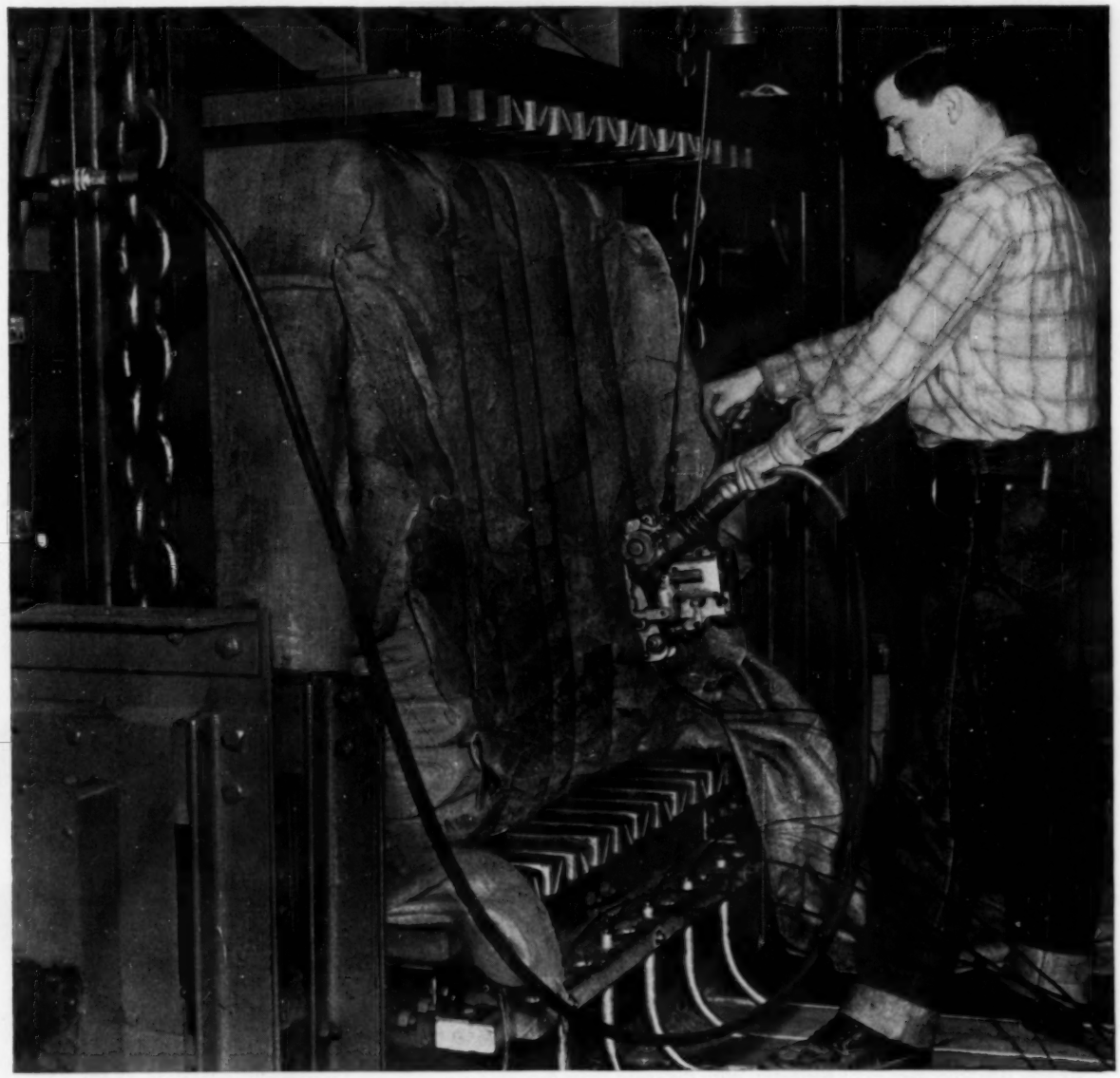
Fork truck—Electrically powered fork truck that handles 6,000 lbs. and can tier to 83 ins. described in folder from Elwell-Parker Electric Co. **(F-37)**

Strapping machine—Applies three steel straps at one time, compresses package as needed. Air operated, electrically controlled. Steel Products Div., Acme Steel Co. **(F-38)**

Lift trucks—Single upright carries forks on three models of gas-powered lift trucks featured in film available at no charge from Hyster Co. **(F-39)**

Hand hoists—Plain and geared trolleys, other auxiliaries described in 44-page booklet from Yale & Towne Mfg. Co. **(F-40)**

Trucking services—General information, routes, main stations, equipment



New Signode strapping tool speeds production of denser bales of fabric

Quick facts

- The new Signode AP is the only portable air-powered tool that tensions, seals, and cuts off strapping.
- All the strap in a coil is used.
- No wasted underlap or overlap.
- Smooth, clean cutoff at seal.

This man is using the new Signode AP tool. Air power quickly tightens each strap to the same pre-set tension, and then an easy motion of the handle seals the strap and cuts it off from the dispenser. All straps share the work, and a denser, neater bale results. Eliminated are the time-wasting operations of cutting strap to length and threading seals. There's no waste of strap. The suspended tool and floor-level strap feed are inexpensive details that help simplify the job.

Signode steel strapping and strapping tools, machines, and methods can help you strap better at less cost. Call the Signode man near you, or write:

SIGNODE STEEL STRAPPING CO.

2642 N. Western Avenue, Chicago 47, Illinois

Offices Coast to Coast. Foreign Distributors and Subsidiaries World-Wide.
In Canada: Canadian Steel Strapping Co., Ltd., Montreal • Toronto

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For SPINNING FRAME DRIVES

Showing a double row of Wood's Variable Speed Drives mounted on Wood's "Quick-Slide" Motor Bases, installed in a well-known textile mill.

...quick, accurate speed control with

Wood's VARIABLE SPEED DRIVE

Wood's offers the simplest variable speed sheave on the market today! So easy to change speeds. Simply turn the single adjusting screw from either side to change pitch diameter. With the speed chart furnished you can adjust the sheave to the desired speed without trial and error. Simplified design provides positive clamping of the two adjustable flanges—eliminates fretting corrosion. Single wide range belt gives maximum HP efficiency. Does away with the problem of maintaining matched belts and matched grooves. (Maintenance costs go down because no periodic lubrication is necessary for the drive.)

Naturally, you are interested in lowering costs . . . so, ask for complete information on the most talked about drive in the Spin-Weave Industry—write for Bulletin #1100 and the name of your nearest Wood's Distributor. No obligation.

HIGHER EFFICIENCY
LARGER SPEED RANGE
ACCURATE SPEED SETTING
CLAMP SLEEVE DESIGN
LESS SHAFT OVERHANG

ADJUSTABLE ON EITHER SIDE
POSITIVE LOCKING
POSITIVE ALIGNMENT
SIMPLIFIED DESIGN
EASY INSTALLATION

NO LUBRICATION

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T. B. WOOD'S SONS CO.

CHAMBERSBURG, PA.

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NEW LITERATURE Continued

listed in brochure from Floyd & Beasley Transfer Co. (F-41)

Truck batteries—For industrial trucks. Bulletin IT-524/6 covers capacities, dimensions, design, and weights. C&D Batteries, Inc. (F-42)

Packing—Plastics of several types for packaging, temporary shelters, goods protection listed in folder from Bakelite Co., Div. of Union Carbide & Carbon Corp. (F-43)

Expendable pallets—How to handle these items illustrated in a wall chart from Signode Steel Strapping Co. (F-44)

Recruitment brochure—Research-and-development-department opportunities of interest to recent graduates are listed in a brochure available from American Viscose Corp. (F-45)

Arnel technical data—Processing information on all phases of dyeing and finishing this fiber is set forth in Bulletin TD-15A, available from Celanese Corp. of America (F-46)

Truck casters—Rigid-plate and swivel types of casters; metal or rubber tires, plain and antifriction bearings in capacities to 1,500 lbs. per caster listed in folder from Faultless Caster Corp. (F-47)

Four-wheel trucks—For in-plant transportation of goods; the trucks are made of magnesium and are described in bulletin from Magline, Inc. (F-48)

Office equipment—Files, desks, drawer sets, other items described in catalog from General Industrial Co. (F-49)

Cellophane handling—How to store and handle cellophane set forth in two wall charts that may be obtained from American Viscose Corp. (F-50)

Textile World

BOOK REVIEWS

SUPPLEMENT TO ASTM BOOK OF STANDARDS, part 7; American Society For Testing Material, Philadelphia 3, Pa.; 220 pages, heavy paper, $4.

This section of the supplements contains 34 additional standards in the fields of textiles, soap, water, paper, adhesives, shipping containers, and atmospheric analysis.

CONTINUED ON PAGE 196

CS_2 AND SODIUM Hy

Stauffer is a major source of supply of these essential textile chemicals. Stauffer was the first – is still the largest – producer of Carbon Bisulfide.

Carbon Bisulfide of purity exceeding 99.9% is shipped in tank cars of 8,000 and 10,000 gallons from Bentonville and Roanoke, Va., Lowland, Tenn., LeMoyne, Ala., Chester, Pa., and Perry, O. (Drums of 5, 10 and 55 gallons from LeMoyne and from Richmond, Calif.)

Sodium Hydrosulfide in aqueous solution of high purity and highest practical concentration is now available in tank cars of 8,000 and 10,000 gallons from Chester, Pa., Roanoke, Va., Lowland, Tenn., and Dominguez, Calif. Also in 55-gallon drums from Chester and Dominguez, and in tank trucks from Dominguez.

For a continuous, dependable and flexible source of supply, make your arrangements with Stauffer.

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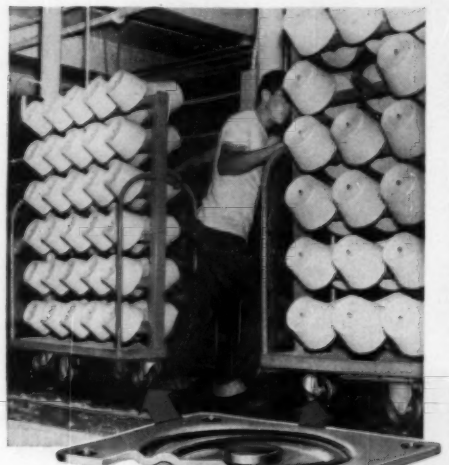
NOBLITT
Faultless CASTER
MATERIALS HANDLING
FACTS

AMES TEXTILE CORP. USES 3-UNIT, CASTERED SYSTEM FOR HANDLING YARN AND KNITTED GOODS PRODUCTION

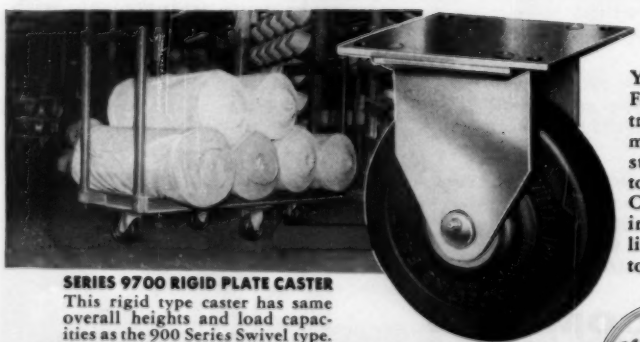


Frequent movement of materials during the production stages of knitted cloth requires the most flexible and maneuverable of materials handling systems. Ames Textile Corp., Lawrence Div. Mills at Lowell, Mass., has developed a 3-unit, integrated system of moving their high quality yarn and knitted goods during production, and Ames executives decided upon a fleet of specially built, Faultless castered trucks for these functions: (1) moving cones of yarn from the spinning frames to humidifying rooms, (2) transporting the moisture controlled cones of yarn to knitting rooms, and (3) handling heavy rolls of knitted cloth from knitting room to storage areas.

Several considerations of casters were made, followed by the *exclusive selection of Faultless 931-6 Double Ball Bearing Swivel Plate and 9731-6 Rigid Plate Casters.* 6″ diameter Plaskite wheels were selected for their combined advantages of high load rating, ease of rolling, and floor-protection characteristics.

Like Ames, you should investigate the numerous advantages of Faultless castered trucks as the backbone of the handling system in *your own plant.*

SERIES 900 DOUBLE BALL BEARING SWIVEL CASTER
This all-purpose caster outperforms the ordinary kind because of design features including complete choice of wheels to suit floor surfaces, loads and operating condition; 2 full rows of hardened ball bearings rolling in hardened, lubricated raceways; full drawn steel horn formed for surplus strength.



SERIES 9700 RIGID PLATE CASTER
This rigid type caster has same overall heights and load capacities as the 900 Series Swivel type.

Your nearby Faultless Industrial Distributor maintains a substantial inventory of Faultless Casters for immediate delivery. Call him today!

FAULTLESS SOLVES THE TOUGH JOBS

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BOOK REVIEWS

CONTINUED FROM PAGE 194

MANUAL ON INDUSTRIAL WATER, (ASTM Special Technical Publication 148-B); American Society for Testing Materials, 1916 Race St., Philadelphia, Pa.; third printing, 502 pages, $6.

The significant increase in the use of water for industrial purposes makes this manual a timely addition to the literature.

Five methods of sampling, 41 standards, four methods of analysis, three standards for methods of reporting results, six standards for methods of test, a glossary of terms, and a list of industrial water requirements are listed in the appendix.

Comprehensive discussions of water, its uses, treatment, sampling, and analysis are included in the manual. There are seven new methods and one important revision included in this printing, as well as two additional proposed methods.

TEXTILE TERMS AND DEFINITIONS, Third Edition; The Textile Institute, 10 Blackfriars St., Manchester 3, England; 111 pages, 12 s. 6d.

A handy reference for every one engaged in the textile industry, this publication provides accurate definitions of 1,000 terms common to textile manufacture and merchandising. Textile technologists should find the booklet invaluable in preparing reports, and the merchandiser can become familiar with the manufacturer's terminology more quickly with this reference volume at hand.

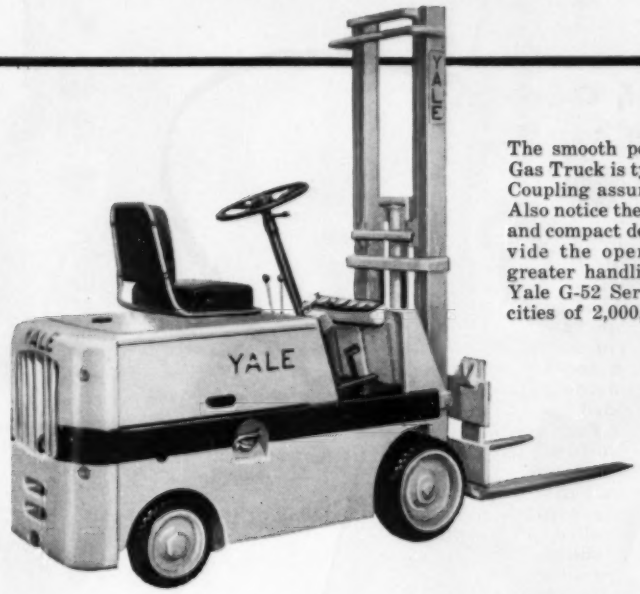
THE PROCEDURE HANDBOOK OF ARC WELDING DESIGN AND PRACTICE: The Lincoln Electric Co., Cleveland 17, Ohio. 1,300 pages, 1,100 illustrations. $3.50.

The eleventh edition of this handbook has been very largely rewritten and brought up to date. All phases of arc welding are covered under the headings of history, nomenclature and processes, weldability, mild steel procedures, manufacturing-cost data, machine design, structural design, applications, and reference data.

Manufacturing-cost data include 28 graphs for estimating costs of such processes as cutting, forming, and welding steel. Each section has its own table of contents, and there is an alphabetical index for the entire book.

Yale G-52 Gas Truck and Midget King Electric Hoist...

...an efficient handling team for the textile industry



The smooth performance of this Yale G-52 Gas Truck is typical of all Yale trucks. Fluid Coupling assures shockfree starts and stops. Also notice the low cowl, grouping of controls and compact design—these Yale features provide the operator with extra visibility, greater handling ease and maneuverability. Yale G-52 Series Gas Trucks come in capacities of 2,000, 3,000 and 4,000 lbs.

Among the many Yale hoists, the Yale Midget King Electric Hoist is especially popular in the textile industry. That's because this hoist is powerful, portable and economical. What's more, the one-hand bar control gives perfect load control, leaves one hand free to guide the load. Yale Midget Kings are available in capacities of ⅛, ¼, ½, 1 and 2 tons.

Find out how Yale G-52 Gas Trucks can speed your floor level handling operations in production, shipping and storage areas...how Yale Midget King Electric Hoists boost efficiency when it comes to overhead handling. For full facts and expert advice on equipment selection, contact your Yale representative or send coupon below.

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Gasoline, Electric & LP-Gas Industrial Lift Trucks • Worksavers • Warehousers • Hand Trucks • Hand and Electric Hoists

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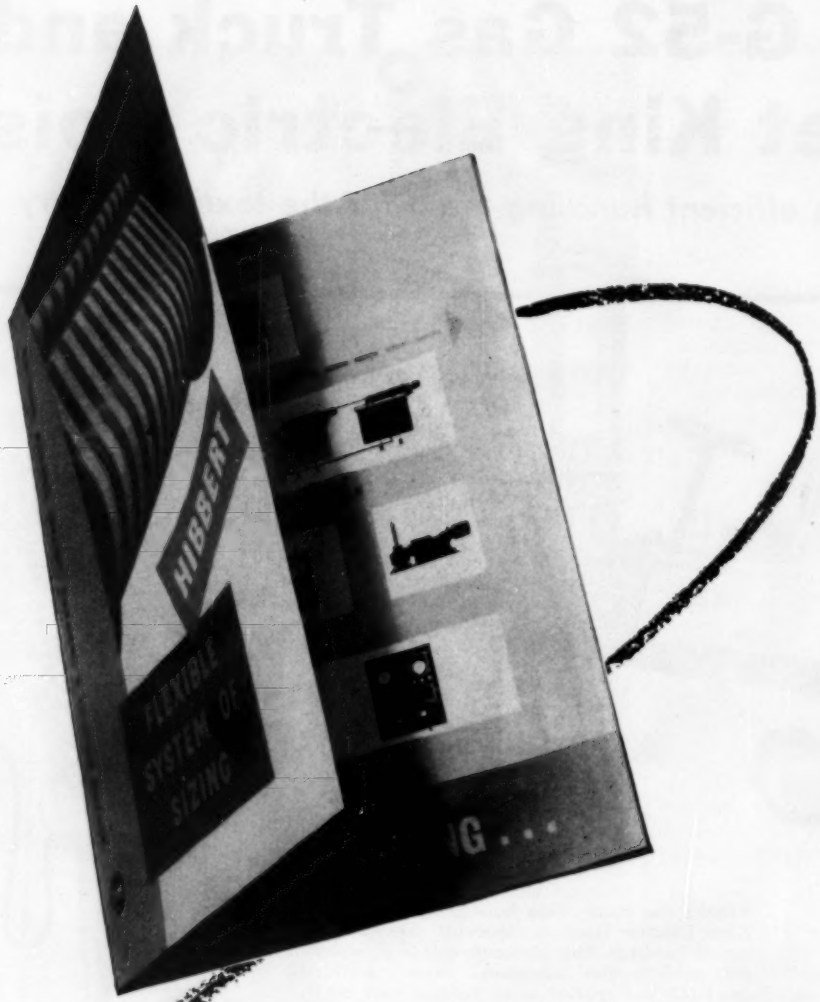

The Hibbert flexible system of sizing

This newly issued booklet describes just how flexible the Hibbert system can be and adequately covers all equipment used in the processing of fibres and filament yarns from a starch preparation to weaver's beam. Please address requests for copies to:

JOSEPH HIBBERT & CO LTD
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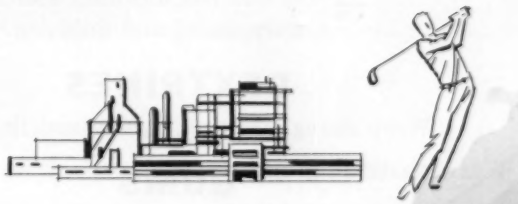

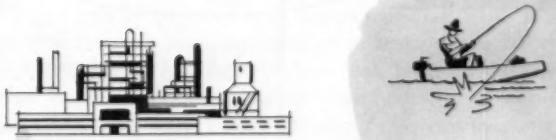

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SHUTTLE INSPECTION SYSTEM

CONTINUED FROM PAGE 149

too low, and the shuttle strikes it. When the shuttle strikes the guard, warp damage usually results. Examine the bottom side of the shuttle guard to see if it is scored or rough.

Inspect the Bottom and Back

1. Shuttle rough on the bottom. Usually the lay-end plate (Draper loom) or shuttle box (C&K loom) is too high. Sometimes a loose screw in the lay-end plate scores the shuttle. In both instances, the warp shed is damaged.

2. Washboard marks on the back of the shuttle. Several loom defects cause washboard marks: a high dent in the reed, a crooked-thrown shuttle, reed not aligned with shuttle boxes, and others. When washboard marks extend only part of the height of the shuttle, the reed is usually not square with the lay.

3. Shuttle back grooved by drop-box shuttle box (C&K loom). When shuttle boxes hang up, the sections are occasionally bent out of alignment. Then the back wall of the shuttle is cut or grooved.

4. Cuts at the back of the shuttle where the curved section squares off. This condition results if the reed is not aligned with the back box plate. If the corner of the plate is worn bright and slick, align the reed to the plate with a straightedge.

5. Back wall of shuttle worn thin. Each time a loomfixer dresses a shuttle, he sands the back surface; and the wall is eventually worn thin and weak. This condition is hastened by sanding off washboard marks without correcting the loom condition.

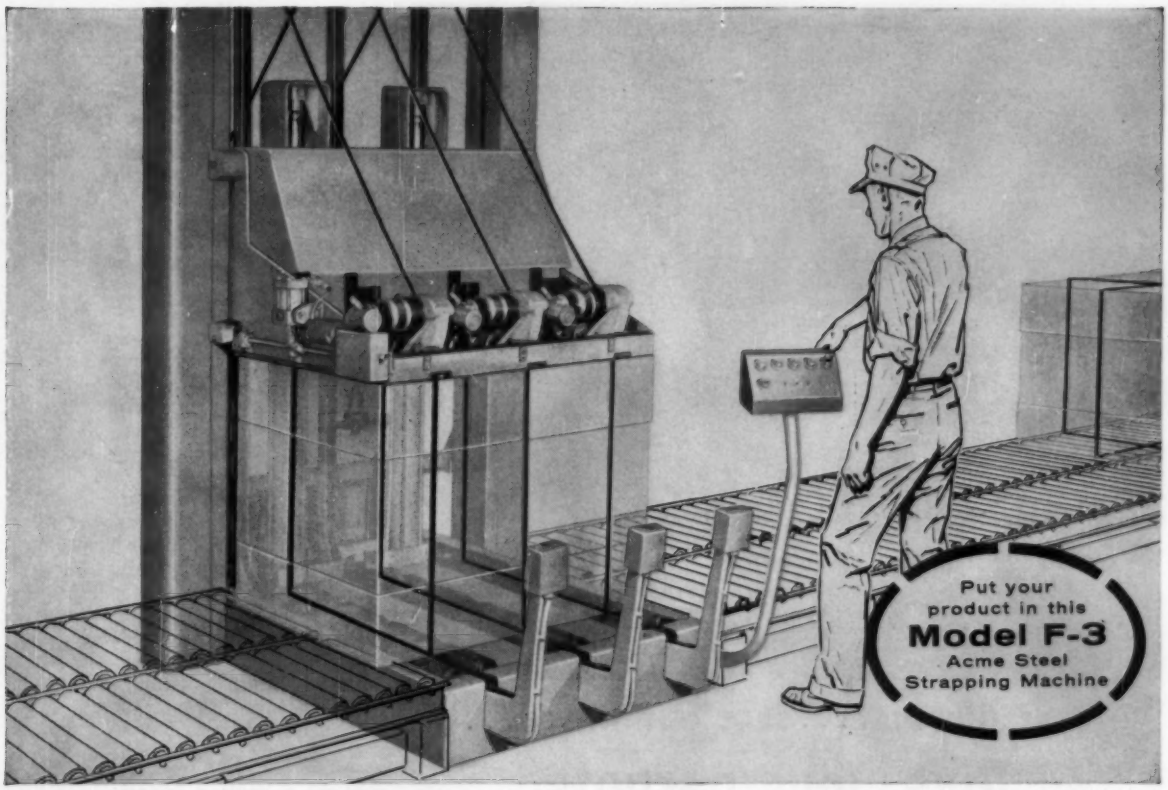
The pressure of shuttle-box binders on thin shuttle backs pushes the back wall against the filling and makes tight picks. Thin back walls also break and make warp break-outs and damage reeds.

Inspect Shuttle Spurs

1. Loose spurs. Shuttle points sometimes work loose. If a loose spur cannot be tightened, throw the shuttle away before it snags the warp.

2. Rough spur. Constant sanding and polishing a shuttle cuts away the wood and fibre and leaves projecting metal where the spur joins the shuttle. This projection snags the warp. To correct this condition, grind the projection smooth and flush with the wood and fibre.

3. Blunt spur points. Shuttle points gradually become rough. On C&K looms, the shuttle-spur point at the drop-box end rubs against the outside



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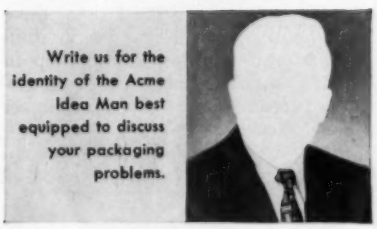
Automatic compression idea aids packaging production

IN SWIFT SINGLE-OPERATION SUCCESSION the Model F-3 Acme Steel Strapping Machine compresses the pack and then tensions, seals and cuts up to three steel straps automatically. If your products pack best through application of compression, the F-3 will help you to fast, clean, economical, low-cost, high-production packaging. And varying sizes of containers can be handled without machine adjustment, varying pressure or output interruption. Operation is push-button simple and allows bands to be in place before the package enters the machine since the F-3 is the only machine that feeds strap around the package. The F-3 Machine steel straps packages up to 65" wide, 84" tall. Minimum package thickness is 12". The only machine to combine compression with steel strapping, the F-3 has an air-actuated, adjustable and completely controlled platen.



***Depend on Your Acme Idea Man.** He is a specially trained consultant on better ways to package any product through use of Acme Steel Ideas, tools and materials. To put his experience to work for you, write to Dept. TAS-67, Acme Steel Products Division, Acme Steel Company, Chicago 27, Illinois. In Canada, Acme Steel Co. of Canada, Ltd., 743 Warden Avenue, Toronto 13, Ontario.

ACME STEEL **STEEL STRAPPING**

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box guide as the box moves up and down. Then a small hook forms on the spur point. The spur must be reshaped.

Inspect Shuttle Fur

1. Loose fur. A small section of fur often comes loose in a shuttle, hangs the filling, and makes the center filling stop motion stop falsely. Glue the fur back carefully so that no glue is left on the fur or the shuttle wall.

2. Worn fur. Running shuttles with badly worn fur is false economy. Sometimes loomfixers brush up fur to give proper tension on the filling; but the fur beats down again quickly, and the tension is loosened. This fur should be removed and replaced with new fur.

3. Glue spots on fur. Carelessly left glue spots on fur break the filling. Loomfixers or shuttle-repair men should use a template when they glue fur in.

4. Rough surface inside the shuttle. Before worn fur is replaced, scrape the inside of the shuttle smooth to remove all dried glue. If the glue and rough surface are not smoothed, filling hangs and breaks as it balloons off the bobbin.

Make a Written Report

The shuttle inspector should have a printed form containing all of the defects listed in this checklist. One copy of the form should be given to the loomfixer on the job. He should go to each loom where there is a defective shuttle, repair the shuttle, and fix the loom.

Another copy of the report should be given to the foreman, and he should follow up the loomfixer by spot-checking the shuttles and looms inspected.

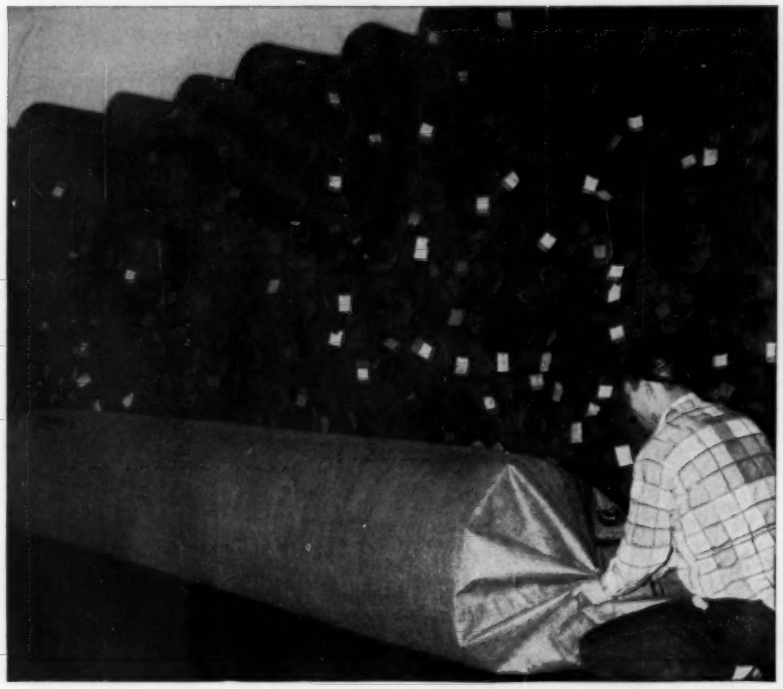
After this shuttle-inspection system has been used for a short time, there will be a significant increase in shuttle life and a corresponding drop in shuttle cost. Other benefits are reduced second-quality cloth and higher loom efficiency.

METALLIC YARNS

CONTINUED FROM PAGE 94

easier laundering. This property has also allowed higher temperatures to be used in dyeing and finishing; and many fabrics of wool, cotton, nylon, and rayon containing metallic yarns are now dyed at the boil.

Some chemicals used for treating textile fibers also affect metallic yarns. For instance, dyes used for acetate also



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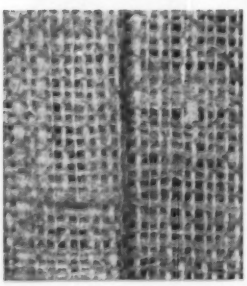
Give your carpets COMPLETE PROTECTION with Bemis Laminated Carpet Covers



The strong, flat cemented seam is the key to complete protection.

Bemis ROL-RAP Laminated Carpet Covers have cemented *seams*, so there are no needle holes to admit damaging dirt and water. The seams are flat . . . and they are much stronger (by tensile strength test) than conventional seams.

The cost? No more than ordinary covers.

You'll save, too, on labor, time and storage space. And the covers fit so snugly that the roll can't telescope and damage the tuft and pile.

Write or wire for *complete* information on Bemis ROL-RAP Laminated Carpet Covers.

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. . . to see how Gaylord Boxes save you money in warehousing. They make possible taller stacking to better utilize your valuable storage space. The superior materials and precision construction of Gaylord Boxes help prevent "stack-bottom bulge."

For proof of how Gaylord Boxes can protect your profit, as well as your product, call your nearby Gaylord office.

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A DIVISION OF CROWN ZELLERBACH CORPORATION

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DARTS ARE THRIFTY ON THE POCKETBOOK

. . . TIGHT ON THE LINE!

Yes sir, Dart Unions cut costs because

1. They last longer — their two bronze seats are precision ground to a true ball joint.
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3. They *stay* tight — damage no property, spoil no work.
4. They can be used over and over again.

Which is why the answer to "How thrifty, how tight *can you get* is . . . GET DARTS"!

QUICK FACTS

- Leakproof because precision-machined to a true ball joint and spherically ground
- Shoulders are heavy — can take abuse
- Each Dart is individually vacuum-tested
- Bronze alloy seats are extra wide, resist pitting and corrosion
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stain acetate- butyrate yarns and dyes that are used for Dacron stain Mylar yarns.

Caustic soda readily attacks aluminum. A thin strip of aluminum is exposed in the edge of the yarn; so caustic treatments, particularly at high temperatures or long exposures, are not recommended for fabrics containing metallic yarns. Heavy concentrations of sulfuric and hydrochloric acid at high temperatures damage the aluminum in all yarns.

Some commission finishers are setting up testing laboratories to identify metallic yarns and guard against errors made in selecting wrong chemicals. In one mill, cotton fabrics with metallics are desized on the jig at 160° F. and scoured with a synthetic detergent at 160 to 170° F. Light colors are given a cold hypochlorite bleach and a rinse and then are dyed with direct colors at 200° F.

Various finishes are given to fabrics containing metallics. In some treatments, such as resin treatments, the temperature is raised to 320° F. in the curing section of the dryer. Upholstery fabrics are often given a latex backing treatment where the latex is applied, dried, and cured in one operation.

Staple Will Introduce Problems

Many of the techniques learned in handling filament metallics will be found useful when staple metallics get into the production stage. Operations such as carding, blending, and spinning will be introduced to metallics for the first time.

These new yarns are crimped and made in various fiber thicknesses from 1/100 to 1/220 in. in all staple lengths. They have been experimentally blended with cotton, wool, and Orlon. Fabrics made from these yarns are expected to be used for ladies' coats and suits, floor coverings, upholstery, drapes, and other uses where filament metallics now hold sway.

CANDY-STRIPE SHEETING

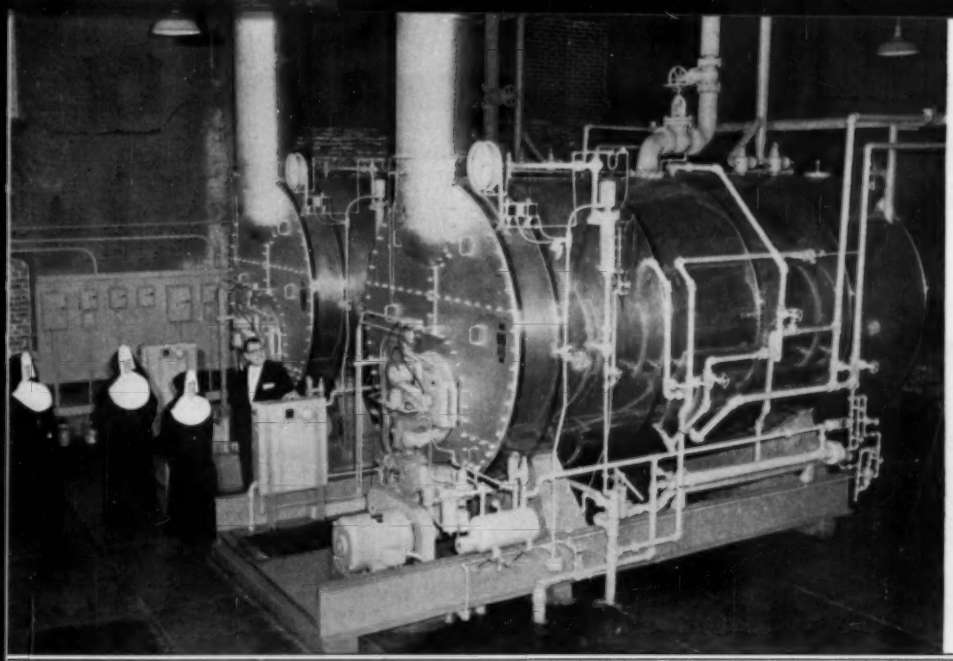
CONTINUED FROM PAGE 141

ployees. Wood floors are sealed and kept in condition with the Tennant system.

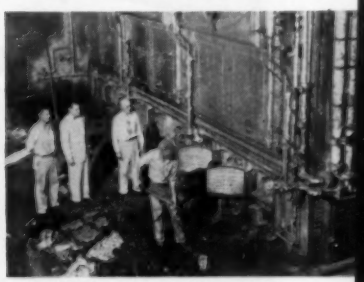
Both weave rooms have fluorescent lighting. The lamps are blown off with compressed air every 48 hrs. to keep them clean.

Looms are blown off every 24 hrs., and looms are also cleaned at warp cutouts and tie-backs. The weave-room building is cleaned by men working for weave-room supervisors.

Warps are handled in the weave



NEW BOILERS combine efficiency and handsome appearance. Edward S. Green, Edgemont (Pa.), contractor, was responsible for this superior installation. Pictured left to right are: Sister M. Cor Immaculatum, Immaculata College Treasurer, Sister Jean Marie, Community Treasurer, Reverend Mother Maria Alma, Superior General and Salvatore S. Guzzardi, Consulting Engineer.



OLD BOILER was a coal-fired HRT model — typical of many replaced by modern Cleaver-Brooks oil, gas or combination oil/gas fired boilers.

Consulting engineer* tells how Immaculata College boiler modernization saves estimated $12,000 each year

Salvatore S. Guzzardi CONSULTING ENGINEER

2928 LEWIS TOWER · PHILADELPHIA 2, PA · KINGSLEY 6-2777

December 20, 1956

Mr. John C. Cleaver, President
Cleaver-Brooks Company

Dear Mr. Cleaver:

Recently our office was retained to make an impartial, exhaustive engineering study of the 40-year old boiler plant and steam system at Immaculata College, Immaculata, Pa., which is staffed by the Catholic order, Sisters of the Immaculate Heart of Mary.

As a result of our recommendations, two fully automatic, oil-fired, 350 bhp Cleaver-Brooks package steam boilers, (12,000 lbs/hr steam each), replaced three hand-fired coal boilers and steam-driven auxiliaries. The new boilers are operating at approximately 80% boiler efficiency year-round.

Conversion of coal firing to automatic #6 oil firing and increased boiler efficiency has reduced the fuel cost approximately 50% -- amounting to a saving of $12,000 each year.

The Cleaver-Brooks boilers burn #6 oil and operate automatically at 80 pounds steam pressure 'round the clock -- without the presence of operators in the boiler room. Eliminating boiler plant labor saves the College $7,500 each year.

The cost of the boiler plant modernization will be paid for out of fuel and labor savings in approximately 2-1/2 years.

Commendation for this outstanding performance of the Immaculata boiler plant is due to your well-engineered boiler design and to the cooperation of your skilled servicemen. The results achieved were so impressive that the Sisters subsequently modernized their Villa Maria Convent, Westchester, Pa., with two 100-bhp Cleaver-Brooks boilers.

Sincerely yours,

Salvatore S Guzzardi

Salvatore S. Guzzardi — Award-winning head of an organization of experienced professional engineers specializing in modernizing power service facilities. Clients include: Pennsylvania University, Baldwin-Lima-Hamilton Corp., H. Daroff & Sons, Sun Shipbuilding & Dry Dock Co. and City of Philadelphia.

Surveys show 32% of boilers now in service are 30 years old; 56% are over 20 years old

If your boiler fits this description, we recommend an immediate survey. "In 90% of the plants surveyed," summarizes Mr. Guzzardi, "we have found it possible to save thousands of dollars and to pay for the recommended improvements out of annual savings within one to three years."

Again and again the proved economy of Cleaver-Brooks four-pass, forced-draft boiler design results in savings reports as impressive as this. Contact your nearest Cleaver-Brooks representative for more facts on the complete line of steam and hot water boilers — 19 sizes, 130 models, 15 to 600 hp — for heating or processing. Or write Cleaver-Brooks Company, Dept. C, 361 E. Keefe Ave., Milwaukee 12, Wis., U.S.A. Cable Address: CLEBRO — Milwaukee — all codes

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from Opening Room to Dye House

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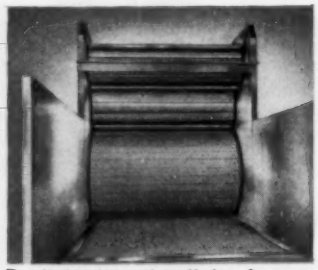
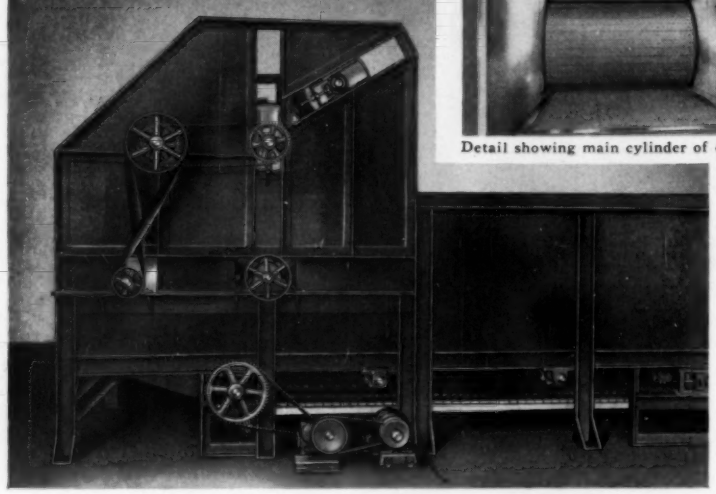


Detail showing main cylinder of opener



NEW HEAVY DUTY OPENER
with Rotary Evener and Stripper

delivers to the next succeeding process a more open, lofty fibre than ever possible with conventional-design openers.

Rotary drives replace the usual oscillating movement of evener and stripper rolls . . . exceptionally rugged construction insures less maintenance, longer life, reliable production quality of 2000 to 3000 pounds per hour . . . no feed rolls hold fibre while being picked, resulting in semi-combing action and fewer neps at the card . . . rolls adjusted to intermesh pins, providing continuous stripping . . .

From opening heavy grease wools for better picking and cleaning, to opening compacted dyed fibres — natural or synthetic — for better drying, here's a really modern-design opener to guarantee a superlative job.

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room on warp trucks. Warps are retied with portable tying-in machines. The mill has stationary tying-in machines but does not use them.

Mill Promotes Own Employees

The weave-room organization is headed by a general overseer of weaving. There are an assistant overseer and a total of five second hands.

Each second hand has a job assignment of about half of the 643 looms.

Loomfixers are assigned sections by loom widths; for example, a section of 90-in. looms is 63 looms.

The base assignment for weavers is also 90-in. looms, and weavers attend 41 looms.

Batteryhands on 90-in. looms on 23s filling yarn have 57 looms. The batteryhands use two-section hopper trucks to transport filling.

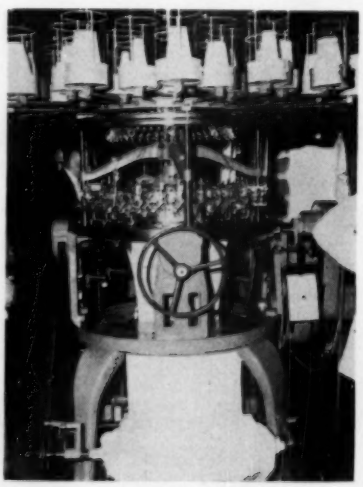
Promotions are given to employees by training new employees all the way up the line. Weavers, for instance, are trained for loomfixers.

UNDERWEAR & OUTERWEAR

CONTINUED FROM PAGE 129

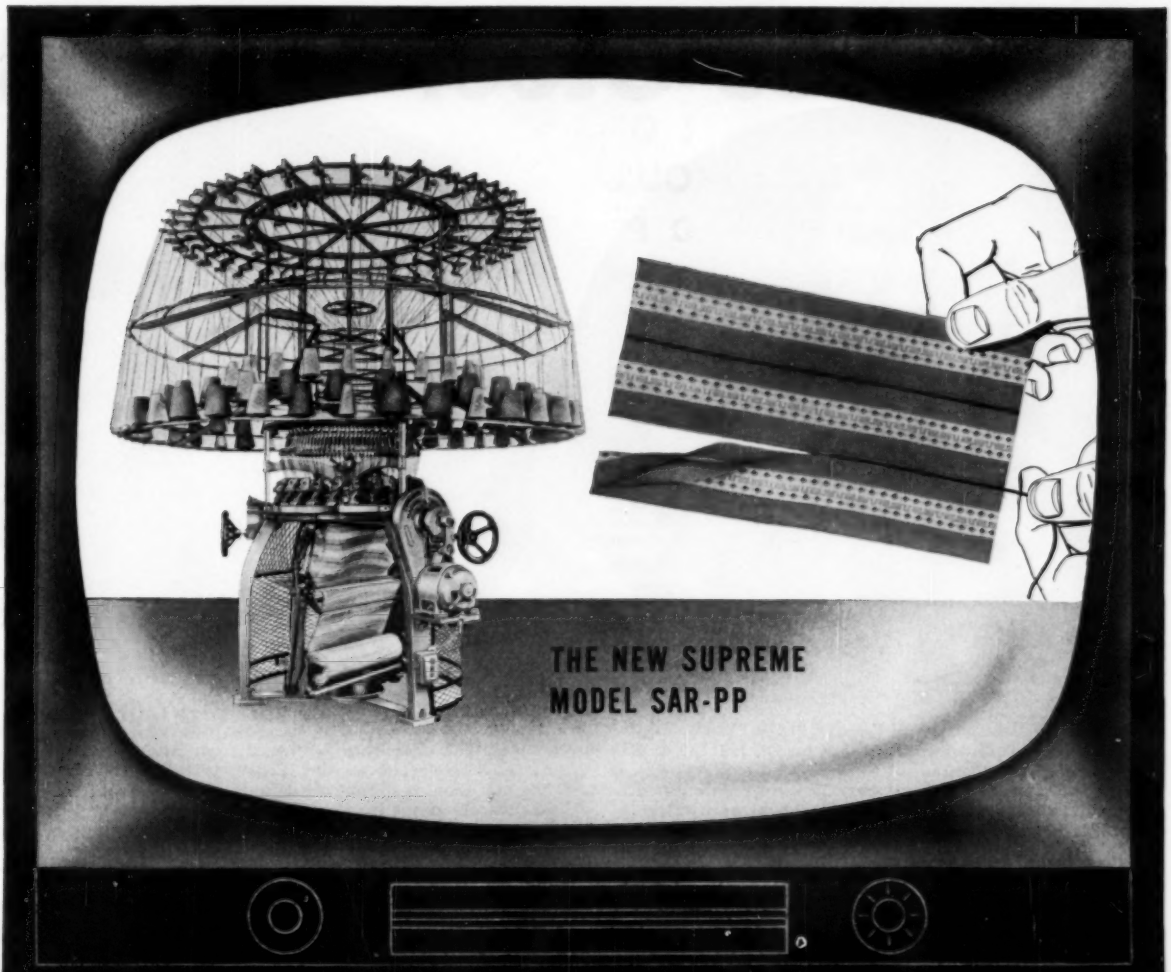
Coned Yarn Support

A coned yarn support for giving snag-free unwinding was being distributed by H. C. Harding, Inc., Philadelphia, Pa. Made by the Beier Mfg. Co., Gary, Ind., it is made of tubular knitted fabric that stretches radially around the cone. (A-120)



Interlock-Sweater Machine

Model MFRC, shown by Scott & Williams, Inc., Brinton Fabrics Ma-



SUPREME Presents A Knitting "SPECTACULAR"

AN ENTIRELY NEW – MULTIPLE FEED – HIGH SPEED – VERSATILE AUTOMATIC STRIPE AND PATTERN RIB KNITTER

● Opens new fields for fancy rib fabrics by virtue of its ability to knit a tremendous variety of high-styled rib cloth at unprecedented production rates *–to 28 yards per hour.*

● Knits automatic variable striped rib–with or without patterned inserts placed where desired–on 1x1 or swiss rib–produces all over patterns–textured effects such as "blister stitches"–fabric with or without draw thread separations (easily removed for uniform selvedge) spaced as desired –scalloped edge fabric–cardigan–a myriad of rib fabrics with new designs and style quality.

● Standard 30" diameter available through 14 needles per inch–contains 24 feeds–with three-position pattern wheels on each cylinder feed–individually and automatically controlled four-color striping boxes (which remain in knitting action at all times) on alternate feeds*–automatic knit, tuck and welt control on all cylinder and dial feeds.

● Incorporates the most advanced engineering design for maximum efficiency–New Seam Knitting Device–(Pat. Applied For) which permits knitting of seam on all feeds without slightest difficulty–stationary "tiered" yarn stand (Pat.) plus all mill proven features of Supreme's SAAF–World's most popular jersey striper.

For further details or a demonstration of the New SAR-PP, contact Supreme today.

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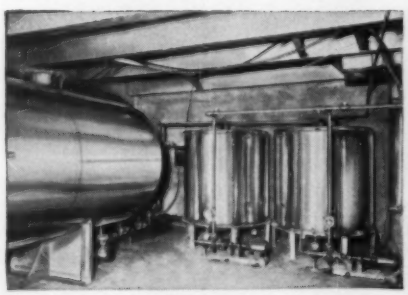
*Available on all twenty-four feeds upon request

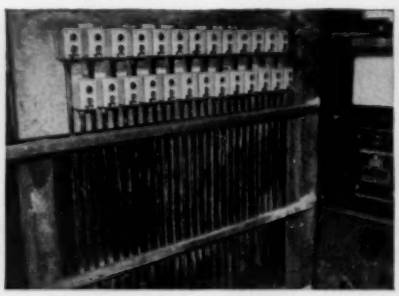
Stainless Steel assures

IF YOU ARE FACED WITH THE COSTLY PROBLEM of corrosion and metallic contamination eating into profits. If it is resulting in premature decomposition of solutions and chemical loss. If it is producing stained and unevenly bleached textile products. If it is causing interrupted production and unnecessary cleaning and maintenance, shortening of equipment life, then . . .

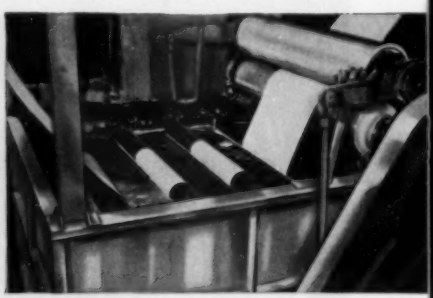
THE ECONOMICAL SOLUTION to your problem is the installation of bleaching equipment fabricated from Republic ENDURO® Stainless Steel. The reason? ENDURO stubbornly resists rust and corrosion. It is non-contaminating. It is inert to the chemical concentrations used in the continuous bleaching process. ENDURO assures batch after batch of pure, matching whites.



ASSURED PURITY of chemicals transported from storage tank to textile equipment is provided by Republic ELECTRUNITE® Stainless Steel Pipe. It stubbornly resists rust and corrosion. It resists the corrosive action of most acids and alkalies. ELECTRUNITE Stainless Steel Pipe's great strength, resistance to high pressure, temperature, and physical damage make it ideal for fluid materials handling. Mail coupon for facts.



ASSURED PROTECTION against production shutdowns is the result of installing "Dekoron®-Coated" ELECTRUNITE E.M.T. or rigid steel conduit. This raceway shrugs off corrosion, reduces replacement costs. A tough coating of polyethylene over a galvanized finish provides an end-to-end armor that is impervious to corrosive fumes and moisture. Joints are protected by polyethylene or vinyl-backed tape. Send for details.



ASSURED LONG LIFE is a built-in feature of textile equipment fabricated from Republic ENDURO Stainless Steel. Photo above shows a saturator used for open-width goods in a continuous steam bleaching process. In use for years, there has been no deterioration, minimum maintenance.

REPUBLIC

REPUBLIC STEEL®

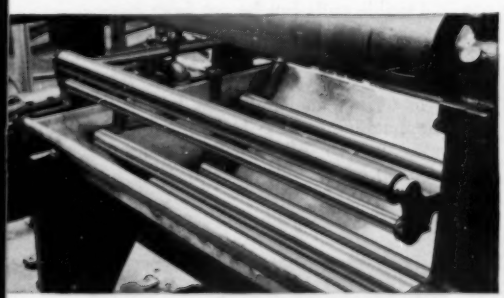
World's Widest Range of Standard Steels

← For more data, write this page number on Reader-Service card.

pure bleached whites

THE PAY-OFF to all segments of the textile industry using equipment made from ENDURO Stainless Steel has been *faster production, lowered costs* and a *higher-quality product.* Shouldn't you be enjoying these same advantages? Your equipment supplier has all the facts on the metal that cuts costs, protects, lasts, and lasts. Or, if you require the services of a metallurgist, mail us the coupon.

THE ADDITIONAL BENEFITS of heat-resistance, high strength, sanitary surfaces, easy cleanability, eye appeal, long life, and low end-cost are automatically yours when you buy ENDURO-made textile equipment. Its easy-clean quality has been a boon to dye houses, making possible quick color changes so that now small runs can be processed economically with no danger of off color caused by dye carry-over.



ASSURED MACHINABILITY at reasonable cost is one reason free-machining ENDURO Stainless Steel Bars are used for textile machine parts, such as the rolls shown above. ENDURO bars also provide resistance to wear and abrasion, strength, toughness, and corrosion-resistance. Republic supplies a complete range of analyses in hot rolled and cold finished form.

STEEL

and Steel Products

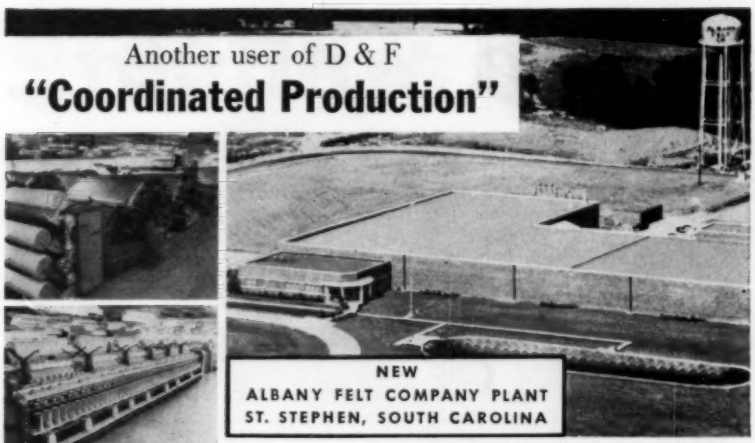
REPUBLIC STEEL CORPORATION
Dept. C-3620
3190 EAST 45TH STREET • CLEVELAND 27, OHIO

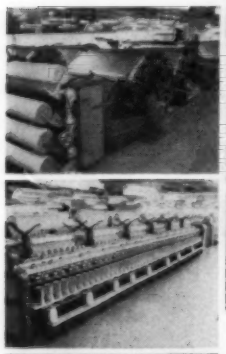
☐ Have a metallurgist call.
Send more information on:
☐ ENDURO Stainless Steel ☐ ELECTRUNITE Stainless Steel Pipe
☐ "Dekoron-Coated" E.M.T. ☐ Free-Machining ENDURO Bars

Name_____ Title_____
Company_____
Address_____
City_____ Zone____ State_____

For more data, write this page number on Reader-Service card. →

Another user of D & F
"Coordinated Production"





The Albany Felt Company is the world's largest manufacturer of paper maker's felts. Significantly, this company chose new Davis & Furber equipment for every possible phase of its operations.

Among the "coordinated" D & F machines installed, *shown at left*, were D & F 84" wide Model L cards, Model F (5" rings) and Model G (7¼" rings) spinning frames, a Model 60 Warp Spooler, and a 500" Sectional Warp Dressing Reel. The South is justly proud of the St. Stephen plant, the first complete wool paper maker's felt plant in that section.

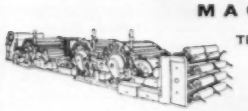
Other quality-minded woolen mills can benefit by investigating this type of "coordinated production" that resulted from D & F research and development in special requirements and sizes. For, Davis & Furber design and manufacturing facilities are "engineered" to *anticipate* trends in textile production. This permits many improvements in existing equipment that can increase quality and production to meet the demands of competitive markets.

D & F "coordinated production" ties Davis & Furber equipment right into your own production needs. It includes in-the-mill services of trained D & F technicians, D & F design engineers, D & F experienced erectors, along with their survey, study and analysis. In addition, you receive complete advice and availability on supplies, accessories and spare parts. **This is a "Package Plan" that assures satisfaction from one source in all these phases of operation.**

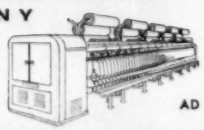
When you want new-plant quality and yield, modernization of existing equipment, or properly specified accessories and supplies, call on Davis & Furber at North Andover or Charlotte.

1832 — *"Our 125th Year"* — 1957
SERVICE TO THE TEXTILE INDUSTRY

DAVIS & FURBER
MACHINE COMPANY



TEXTILE MACHINERY DESIGNERS AND MANUFACTURERS
North Andover, Mass.
Charlotte, North Carolina



AD 12-1

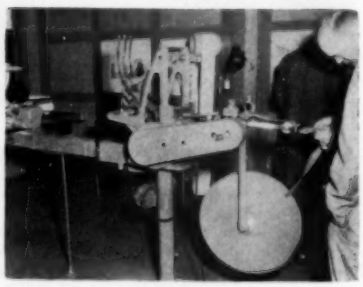
CARDS • SPINNING FRAMES • PREPARATORY MACHINERY • WARP DRESSING MACHINERY • FINISHING MACHINERY
MACHINERY MODERNIZATION • ACCESSORIES, SUPPLIES, CARD & NAPPER CLOTHING, GARNET WIRE, TAPES & APRONS
SPARE PARTS • TECHNICAL SERVICE & CONSULTATION

chine Div., Laconia, N. H., makes 40 interlock sweater strips per hour. The machine has 30 feeds, but it knits 15 courses per revolution in the 1x1-rib cuff. To knit the cuff, the yarns are striped out on the long-needle feeds and a second yarn is introduced to the short-needle feeds.

A cage around each yarn cone controls the yarn when the yarns are idle during cuff knitting. A separating thread is striped in, and the cuff edges are made with a welt. A blower device operates from the pattern chain to blow air through pipes to the needles. The 30-in.-dia. machine was running 70/2 Ban-Lon yarn. **(A-121)**

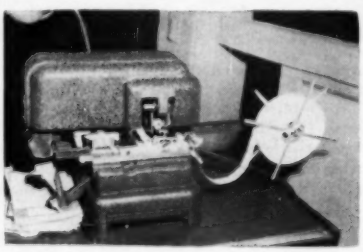
CUTTING, SEAMING, LABELING

CONTINUED FROM PAGE 138



Cuff-Cutting Machine

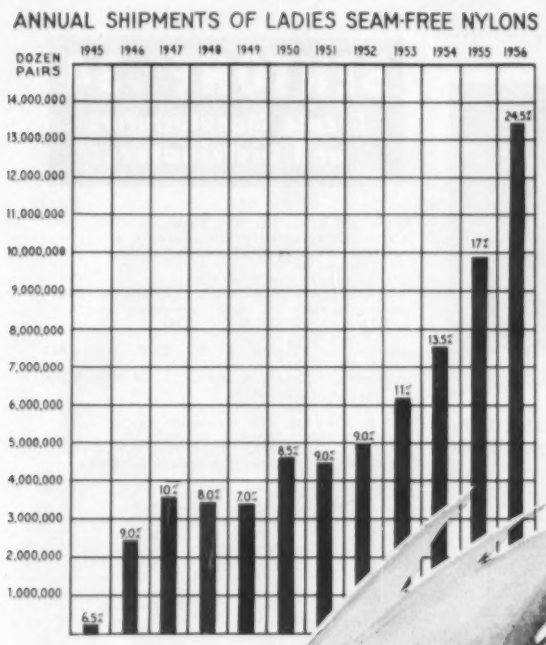
Double cuffs can be cut from circular or sewed knitted tubing by a machine shown by Utica Novelty & Mill Specialty Co., Utica, N. Y. Cuffs from 2 to 6½ ins. in length can be cut on the machine from 2- to 3-in. tubing at rates up to 45 cuffs per minute. **(A-122)**



Label Machine

A machine that prints and attaches labels to cellophane, polyethylene, or Mylar bags was displayed by Soabar Co., Philadelphia, Pa. Either heat-sealable labels or pressure-sensitive labels can be printed and attached by the Model 10 TW machine shown. Set type or addressograph plates may be used for data. **(A-123)**

CONTINUED ON PAGE 212



Seam-Free NYLONS

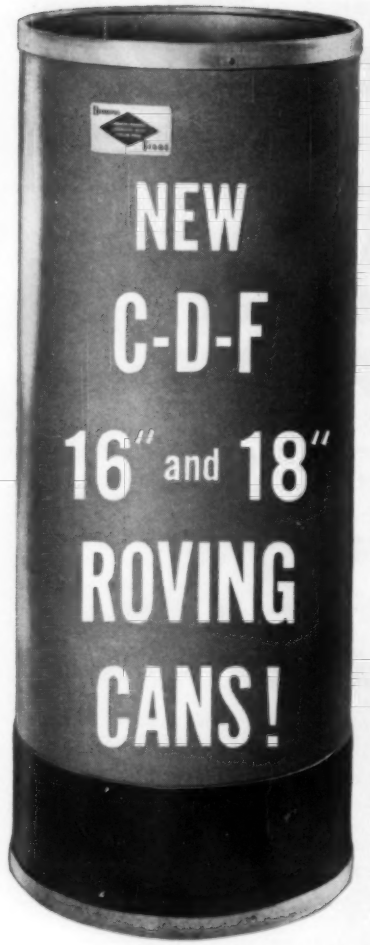
in ever increasing consumer ~~acceptance~~ *demand*

Stepping in High Fashion

Seam-Free hose of superlative fineness and clarity of fabric, either plain or patterned, to satisfy the most fastidious wearers, are produced on the famous Scott & Williams KN circular knitting machine (with patented automatic tensioning)

SCOTT & WILLIAMS, INC. Est. 1865 STANDARD IN THE KNITTING INDUSTRY LACONIA, N.H. U.S.A.

Main Offices and Plants: LACONIA, N. H.
Sales Office: Empire State Building, N. Y. 1, N. Y.



SEAMLESS!
SNAG-FREE!

Now you can get Diamond Fibre Roving Cans in the big 16" and 18" diameters from regular stock at the Spartanburg plant-warehouse.

Static-free rolled fibre top rim for running synthetics; one-piece steel top rim; or swedged top rim—these meet all roving requirements.

CDF Diamond Fibre Roving Cans are smooth, strong, long-lived. Their interior surface, like porcelain, resists cracking and softening—won't snag yarns.

Make the CDF Spartanburg warehouse (834 Hayne Street, Spartanburg, S.C.—Tel. 3-6397) your headquarters for fibre and Celoron loom parts, gears, trucks, and mill boxes. Call Spartanburg or write for CDF Receptacles Catalog.

CONTINENTAL-DIAMOND FIBRE
A Subsidiary of the Budd Company • Newark 55, Del.

CONTINUED FROM PAGE 210

Transfer Machine

A semiautomatic, air-operated transfer machine was shown by Philadelphia Metal Drying Form, Inc., Philadelphia, Pa. Taking the place of a hand-transfer iron, it has no motors, gears, or parts to replace. It is thermostatically controlled, and the number of strokes ranges from 35 to 65 per minute. (A-128)

Hosiery-Trimming Machine

Inspection and removal of loose threads are done in one step by the Trim-Master shown by Ginsberg Machine Co., Inc., New York, N. Y. Designed for women's seamless hosiery, the machine uses a clipper head to trim off thread ends and includes a vacuum system that removes trimmings to a tank. (A-129)

Shank-Button Feeder

An automatic shank-button feeder was shown by Mohawk Button Co., Inc., New York, N. Y. It can be attached to any button-sewing machine on the market, and recent improvements have brought productivity up to a reported 120,000 buttons per day. It will take any buttons from 14 to 30 ligne. (A-130)

Vibration Button Feeder

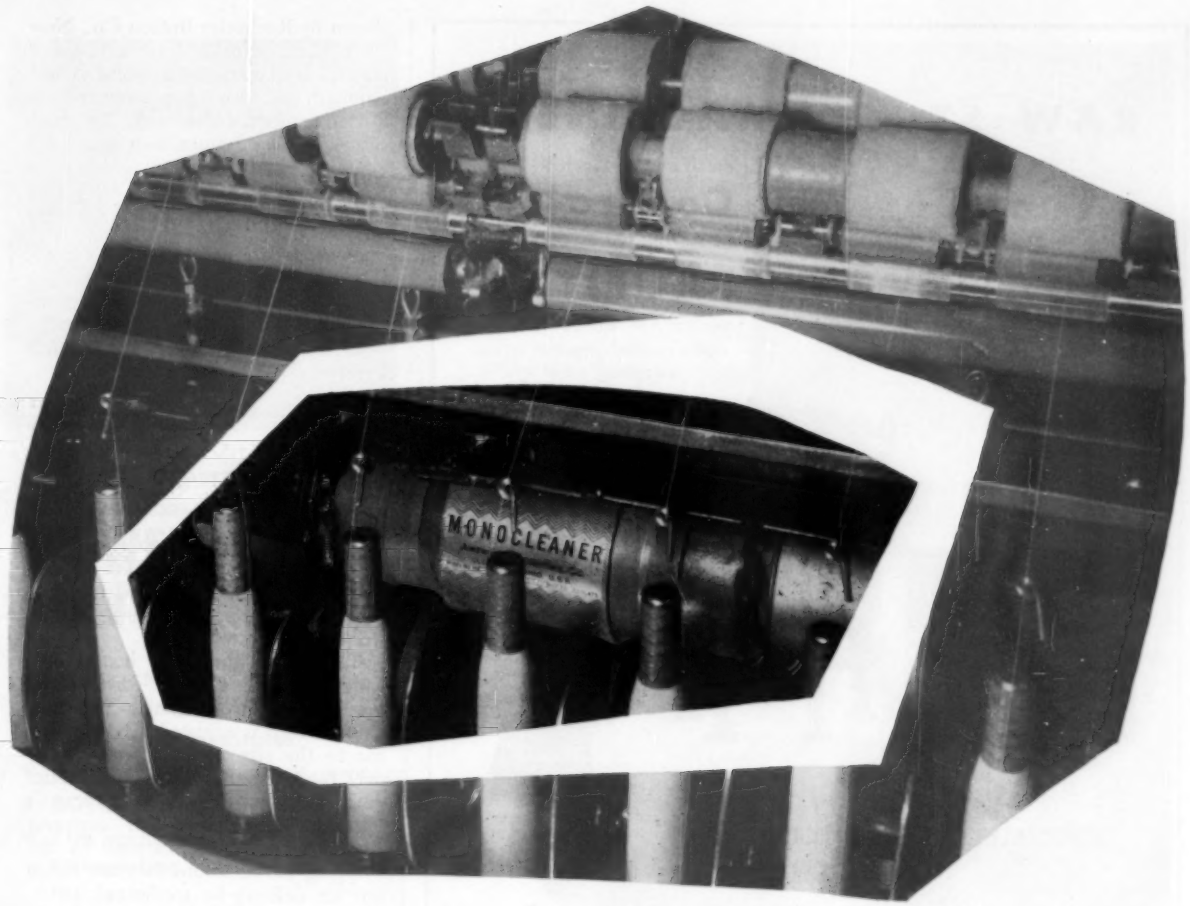
A nonmotorized shank-button feeder called the Speed-Feed was

BENTONE* 34
Grease Manufacturers and Distributors

THE ACME REFINING CO., Cleveland, Ohio
ADAM COOKS SONS, INC., Linden, N. J.
ALEMITE DIV., STEWART-WARNER CORP., Chicago, Ill.
ALLUBE CORP., Glendale, Calif.
THE AMERICAN LUBRICANTS CO., Dayton, Ohio
ARKANSAS FUEL OIL CORP., Shreveport, La.
BATTENFELD GREASE & OIL CORP., Kansas City, Mo.
BATTENFELD GREASE & OIL CORP. OF CALIFORNIA, Compton, Calif.
BATTENFELD GREASE & OIL CORP. OF NEW YORK, North Tonawanda, N. Y.
BEL-RAY CO., INC., Madison, N. J.
THE BROOKS OIL CO., Pittsburgh, Pa.
CASCADE PETROLEUM CO., Denver, Colo.
CATO OIL AND GREASE CO., Okla. City, Okla.
CONSUMERS COOPERATIVE ASSOCIATION, Kansas City, Mo.
CONTINENTAL OIL CO., Houston, Texas
CRAWFORD EMULSIONS, Pittsburgh, Pa.
DENS-OIL LUBRICANT CO., Kansas City, Mo.
JAMES W. DOYLE CORP., Detroit, Mich.
FISKE BROTHERS REFINING CO., Newark, N. J.
FISKE BROTHERS REFINING CO., Toledo, Ohio
THE FRANKLIN OIL AND GAS CO., Bedford, O.
GEORGIA-CAROLINA OIL CO., Macon, Georgia
GLOBE GREASE & MFG. CO., Los Angeles, Calif.
GOPLERUD LUBRICANTS CO., Mason City, Iowa
GREDAG, INC., Niagara Falls, N. Y.
HI-WAY REFINERIES, LTD., Regina, Sask., Canada
THE HODSON CORP., Chicago, Ill.
THE HODSON CORP. (QUEBEC), INC., Three Rivers, Quebec, Canada
E. F. HOUGHTON & CO., Philadelphia, Pa.
ILLICO INDEPENDENT OIL CO., Lincoln, Ill.
INTER-STATE OIL CO., Kansas City, Kansas
KEYSTONE LUBRICATING CO., Philadelphia, Pa.
LUBRICATION CO. OF AMERICA, Los Angeles, Calif.
MacMILLAN OIL CO. OF ALLENTOWN, Allentown, Pa.
MAGIE BROTHERS, INC., Chicago, Ill.
MAGNUS CHEMICAL CO., Garwood, N. J.
MANITOBA CO-OPERATIVE WHOLESALE LTD., Winnipeg, Man., Canada
METALCOTE OIL CO., St. Paul, Minn.
MID-STATES LUBRICANTS, Kansas City, Mo.
MIDWEST OIL CO., Minneapolis, Minn.
THE OHIO GREASE COMPANY, Loudonville, O.
OIL-KRAFT, INC., Cincinnati, O.
OIL DISTRIBUTORS OF PHILADELPHIA, Philadelphia, Pa.
ONYX INTERNATIONAL, Jersey City, N. J.
PANTHER OIL & GREASE MFG. CO., Fort Worth, Texas
PANTHER OIL & GREASE MFG. CO. OF CANADA, Toronto, Ontario, Canada
PENN-CREST OIL & GREASE CORP., Long Island City, N. Y.
PENN PRODUCTS CO., DuBois, Pa.
PHOENIX OIL COMPANY, Augusta, Ga.
A. B. PLATING SUPPLY CO., Milwaukee, Wisc.
PRAIRIE STATES OIL & GREASE CO., Danville, Ill.
PRECISION BEARING & TRANSMISSION CO., Omaha, Nebr.
RILEY BROS., INC., Burlington, Iowa
SASKATCHEWAN FEDERATED COOP, LTD., Regina, Sask., Canada
ADOLF SCHMIDS ERBEN S. A., Berne, Switzerland
SERVICE LUBRICANTS, INC., Chicago, Ill.
L. SONNEBORN SONS, INC., New York, N. Y.
SOUTHWEST GREASE & OIL CO., INC., Wichita, Kan.
SOUTHWESTERN PETROLEUM CO., Fort Worth, Texas
SPECIALTY PRODUCTS CO., Jersey City, N. J.
SUNLAND REFINING CORP., Fresno, Calif.
SYRACUSE FIRE BRICK SUPPLY, Syracuse, N. Y.
THREE RIVERS REFINERY, Three Rivers, Tex.
TIDE WATER ASSOCIATED OIL CO., N. Y. C.
TIONA PETROLEUM CO., Philadelphia, Pa.
TOPSALL LUBRICANTS, INC., Kenmore, N. Y.
TOWER OIL CO., Chicago, Ill.
TRANSMISSION EQUIPMENT CO., Pittsburgh, Pa.
TRI-STATE PETROLEUM CO., Philadelphia, Pa.
UNITED COOPERATIVES, INC., Alliance, Ohio
UNITED PETROLEUM CORP., Omaha, Neb.
UNIVERSAL AVIATION SUPPLY, Wichita, Kan.
C. C. WAKEFIELD & CO., LTD., Toronto, Ontario, Canada
THE WARREN REFINING AND CHEMICAL CO., Cleveland, Ohio
THE WAVERLY OIL WORKS CO., Pittsburgh, Pa.
THE WESTERN OIL CO., LTD., Moose Jaw, Saskatchewan, Canada
WESTLAND OIL CO., Minot, N. D.

*T.M. Reg.

BENTONE·34®



For textile mills or

WHEREVER CLEANLINESS COUNTS

use non-melt grease made with BENTONE* 34

High-performance grease made with Bentone* 34 is solving problems for textile mills, food plants, or any "problem installation" where a drop of grease can spoil a batch of products. The reason: *Grease made with Bentone 34 does not melt or bleed.* It stays in place under heat.

This has been proved by such firms as American Monorail Company, Cleveland, Ohio. Their lint cleaners for textile mills use grease compounded by using Bentone 34. Specify greases made with this remarkable non-soap, non-melt grease component. *Write for data or see your local supplier.*

Dutch Boy
* TRADEMARKS REGISTERED

BENTONE* 34
FOR MULTI-PURPOSE GREASE

BAROID DIVISION
NATIONAL LEAD COMPANY
P. O. Box 1675
Houston 1, Texas

5730

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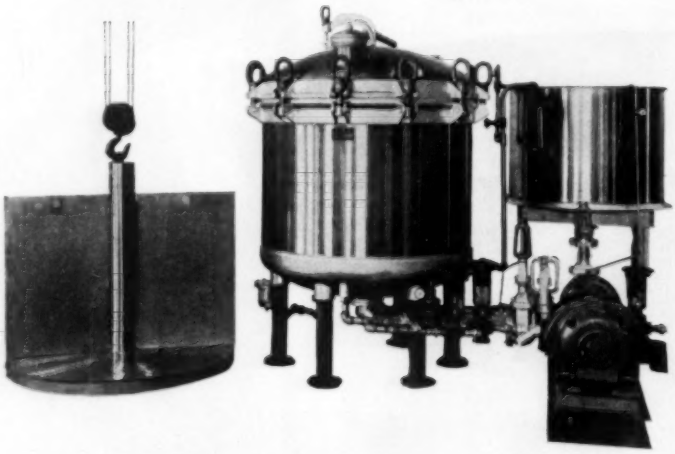
RAW STOCK MACHINES

That Let You Control

QUALITY and PROFITS



ESPECIALLY DESIGNED FOR

Today's Newer Synthetic Stocks

Machines with one-way circulation are available in sizes from 1 to 1500 lbs., can be built for use with racks commonly used for cotton or wool stock. Newer synthetic stocks can be dyed more successfully in perforated stainless steel baskets with the dye liquor flowing horizontally "inside-out or outside-in". The conventional raw stock machine with one-way circulation has a "downward" flow which causes packing and felting of stock. Machines are available for various capacity baskets for horizontal flow one-way or both-ways, according to your needs. Machines can be built to accommodate all type carriers wherever required. Write for folder giving complete information.

GASTON COUNTY DYEING MACHINE CO.

Pioneers In Automatically Controlled Dyeing Machinery

STANLEY, N. C., U. S. A.

Gaston County Dyeing Machine Co.
Terminal Bldg., 68 Hudson St.
Hoboken, N. J., G. Lindner, Mgr.

A. R. Breen
80 E. Jackson Blvd.
Chicago, Ill.

The Rudel Machinery Co., Ltd.
614 St. James St. W. Montreal
260 Fleet St. E., Toronto

shown by Rochester Button Co., New York, N. Y. Worked by vibration and gravity, electricity for a motor is not required. A turn of a screw allows buttons of another size to feed through. The hopper is designed for rapid change. **(A-131)**

Plastic Button

A new plastic button called Permaloid was shown by Emsig Mfg. Co., New York, N. Y. Available in all commercial sizes, the company states it has more-lasting luster than natural buttons. **(A-124)**

CONVEYOR SYSTEM

CONTINUED FROM PAGE 145

storage area until enough cartons of one size are accumulated for sealing.

Empty carriers are pushed to a live conveyor that returns them to the stock racks for refilling.

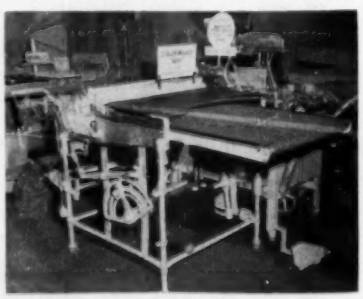
Cartons of the same height and width are sent along a conveyor to the glue-sealing machine. This machine, which is adjusted by the operator to the size of the carton, turns over the top and bottom flaps, applies glue, and automatically seals them.

A declining power-belt conveyor then transports the cartons to the shipping room, where they are sorted out for delivery by truck.

In addition to eliminating bottlenecks, the system has improved service to the customer and cut down handling. The work is easier because the carriers and cartons never leave the tracks. Space has also been saved so that extra crews can be used to eliminate overtime pay during rush periods.

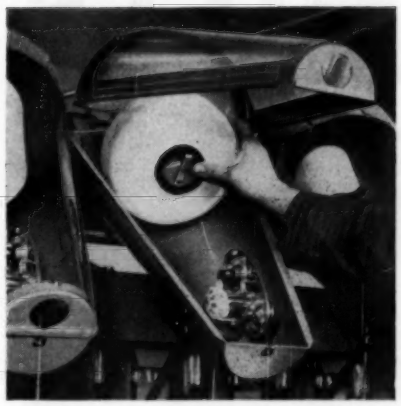
HANDLING, INSPECTING, PACKAGING

CONTINUED FROM PAGE 140

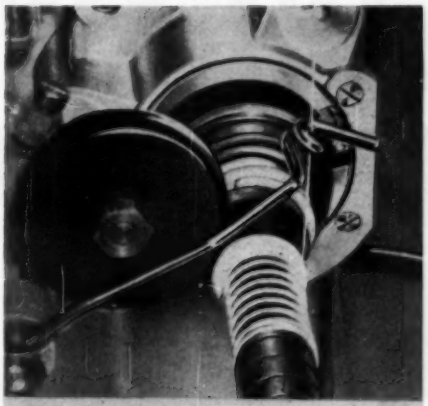


Wrapping Machine

Overwrapping of trays or boxes with plastic films is featured in a



Suction hood takes all normal cross wound bobbins, also cheeses.



ROTOR device for tailless pirns reduces labour when filling loom batteries.

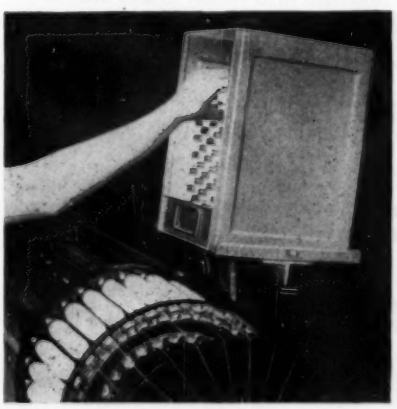
SCHWEITER SUPER-AUTOMATIC PIRN WINDER type MSL

- **Automatic feeding device for empty pirns**
- **Individual apparatuses**
- **Automatic suction dust remover**
- **ROTOR device for tailless pirns**
- **Pirn packing device PACKER, for transporting the pirns directly to the loom**

This is one of the most efficient and versatile constructions in the field of automatic pirn winders.

SCHWEITER LTD.
HORGEN (Zurich) Switzerland

Manufactured by **WHITIN MACHINE WORKS, Whitinsville, Mass. (U. S. A.)** *for sale in U. S. A. and Canada.*
Manufactured by **SCHWEITER** *for sale in other countries.*

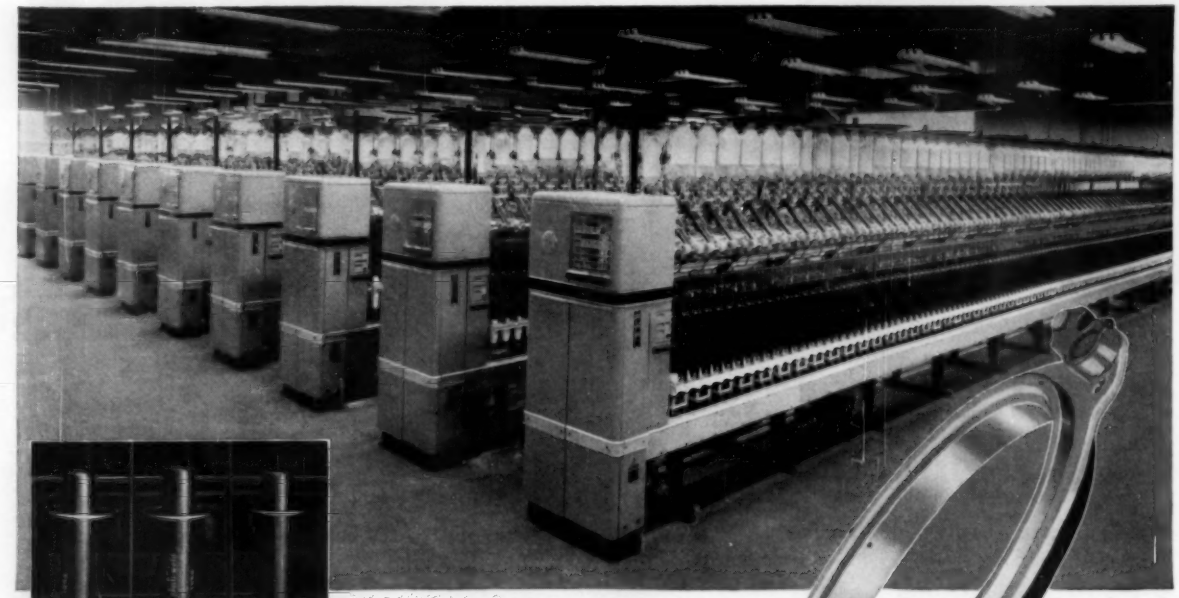


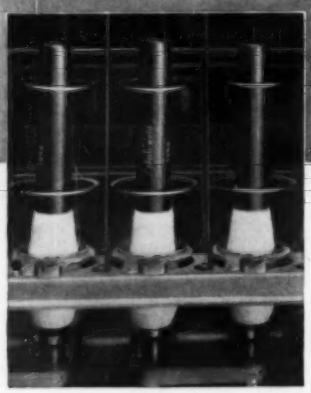
Fully wound bobbins are easy to fill in the loom battery. Exchanging of empty boxes for full ones is very simple.

Packer boxes are to be stacked very easily. 70 boxes totalling up to 7000 pirns moved at one time.

For more data, write this page number on Reader-Service card. →

DELAWARE MILLS





Says Mr. William C. Appleton, President of Delaware Mills, Inc., "We are well satisfied with our HERR Conical Rings both on spinning and twisting."

Herr Conical Rings are used on these new Saco-Lowell GWALTNEY Spinning Frames. They are also used on Delaware Mills — Universal Winding Company 10B Twisters.

The HERR Conical Ring provides ideal conditions for the spinning or twisting of any yarn.

Produce High Bulk Orlon at Increased Speeds and with Improved Quality by Using . . . .

HERR CONICAL RINGS

Equip with HERR Conical Rings and begin to enjoy these profit making features. You can speed up production, improve quality and lower costs with HERR Conical Rings. You'll gain too, many other advantages. They stop yarn breakage, permit heavier doffs, produce smoother yarns and reduce fly. You'll enjoy cleaner yarn because oil is not thrown off. Frames and room floors stay cleaner. Travelers last longer because oil is carried in capillaries to ring surfaces. Maximum spindle speeds are achieved.

Learn more about these wonder rings. Write today for descriptive literature.

FOR SPINNING AND TWISTING WORSTED, WOOLEN, RAYON, NYLON, ORLON AND BLENDED YARNS OF ALL TYPES

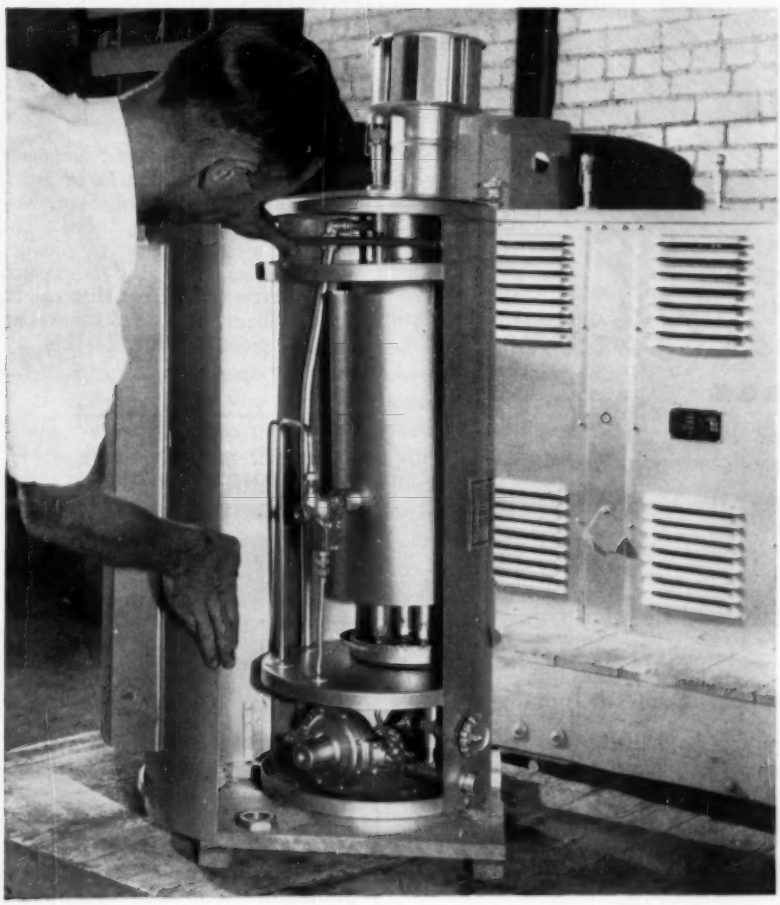
HERR MANUFACTURING CO., INC.

9 Franklin St., Buffalo, N. Y.

← For more data, write this page number on Reader-Service card.

where heat and corrosion are mill problems...

This Special Armco Steel Saves Money Two Ways



You gain lower costs when you specify Armco ALUMINIZED STEEL® Type 1 for housings of dryers, heaters, ovens, and similar textile mill equipment.

Here's **how** this special Armco hot-dip aluminum-coated steel helps you save:

1. **Maintenance costs are cut** because of the much longer service life of this special coated steel. Exceptional resistance to a combination of heat and corrosion is the reason for its long service life.
2. **Fuel is saved** by the heat-reflecting properties of Armco ALUMINIZED STEEL. Desired temperatures can be maintained with less heat input.

Since high strength and a clean-looking surface are additional benefits of this 2-in-1 metal, it's easy to see why it is being specified in more and more mills.

CHECK THE COUPON

If you are planning to install new drying or heating equipment, it will pay you to investigate the cost-saving advantages of this special steel. Just fill in and mail the coupon. We'll put you in touch with equipment fabricators who use Armco ALUMINIZED STEEL.

This compact LP vaporizer and the larger unit behind it are used on cotton drying heaters. Both have casings made of Armco ALUMINIZED STEEL Type 1 to withstand the combination of heat and corrosion.

ARMCO STEEL CORPORATION

1377 Curtis Street
Middletown, Ohio

ARMCO STEEL CORPORATION
1377 Curtis Street, Middletown, Ohio

Where can I buy _____ made of
Armco ALUMINIZED STEEL? (type of equipment)

Name _____

Title _____

Street _____

City _____ Zone _____ State _____

Sheffield Steel Division • Armco Drainage & Metal Products, Inc. • The Armco International Corporation

For more data, write this page number on Reader-Service card. →

it's a smooth operation from start to finish . . .

when you use Clinton® starches

Smooth warp sizing. Smooth finishing. Yes, from the minute you start using Clinton starches you'll experience a smooth operation all down the line.

Clinton starches are widely used for warp sizing. They increase strength . . . smooth fibers so abrasion is reduced . . . resulting in smooth running warps. And that's only the beginning. At the finishing operation, Clinton starches provide proper hand and body to your fabrics.

So, from start to finish . . . from
quisette . . . choose starches by Clinton.

. . . and remember technical service in connection with your specific problems is available without obligation

Quality products

FROM THE WORLD'S CORN CENTER

CLINTON

CLINTON CORN PROCESSING COMPANY
CLINTON, IOWA

Our 50th Anniversary Year—1907-1957

machine shown by Miller Wrapping & Sealing Machine Co., Chicago, Ill. The model shown handles treated Mylar film and applies benzyl alcohol to the sealing area so that heat produces a bond. (A-125)

Automatic Garment Press

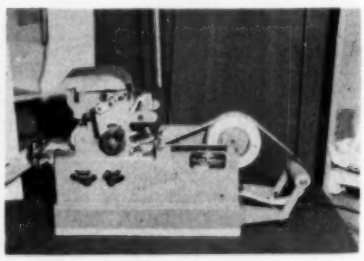
A flat-bed press for knitted garments that features completely automatic action was demonstrated by New York Pressing Machinery Corp., New York, N. Y. The steaming and drying cycles can be varied in length to suit the garments being pressed. (A-126)

Box-Forming Machine

Glued-up garment boxes are made directly from die-cut blanks by a machine shown by United Shoe Machinery Corp., Boston, Mass. The machine uses hot glue to produce instant adhesion of the box parts. Change-overs to different sizes can be made in about 1 min. Production is up to 4,500 pieces per day. (A-127)

PACKAGING EXPOSITION

CONTINUED FROM PAGE 111



Label Imprinter

Auxiliary information such as size, color, price, or quantity can be imprinted on stock labels by the Roto Kimco, manufactured by A. Kimball Co., New York, N. Y.

Three models offer maximum printing areas from $2\frac{3}{8}$x$4\frac{3}{8}$ ins. to $6\frac{5}{16}$x$4\frac{3}{8}$ ins. Metal logos, slugs, or sticky-back rubber plates can be used in the machine, providing up to 23 lines of copy. Production is 150 labels per minute, which can be cut into units or rerolled as desired. (B-14)

Repeating Tape Dispenser

An improved gummed-type dispenser that delivers preset lengths of moistened tape repeatedly was demonstrated by National Package Sealing Div., Nashua Corp., Nashua, N. H. The unit is marketed as the National 88 Repeater. (B-15)

How many ways do you know to blend Cotton and Nylon?

Can you calculate the hardness of yarn twist? How about a fast way to set dobbies? What's a source of supply for chelating agents? Who makes J-boxes? What a business!

Too bad you wern't born twins, the questions that keep coming up. Well, we've got good news for you. Mentally you can be two men—so long as you always remember to keep your FACT FILE at your elbow. It will save your time, save you trouble . . . who knows, someday it might even save your reputation. As we travel around, we see more and more mill men using it, some such enthusiastic fans that they say, "Steal my wife, but not my FACT FILE."

No, it's not three tons of book—but a single, compact volume you get with your regular TEXTILE WORLD subscription. It's so easy to handle, indexed right on the cover so you find what you're looking for fast. It packs a million miles of answers into only 354 pages. It's been researched by the best brains in the business . . . put together by the field's top publisher. And it has been checked and rechecked year after year so that TEXTILE WORLD's editors are certain it contains clear, reliable answers to the questions that come up most. So, you, too, get the FACT FILE habit. It pays!

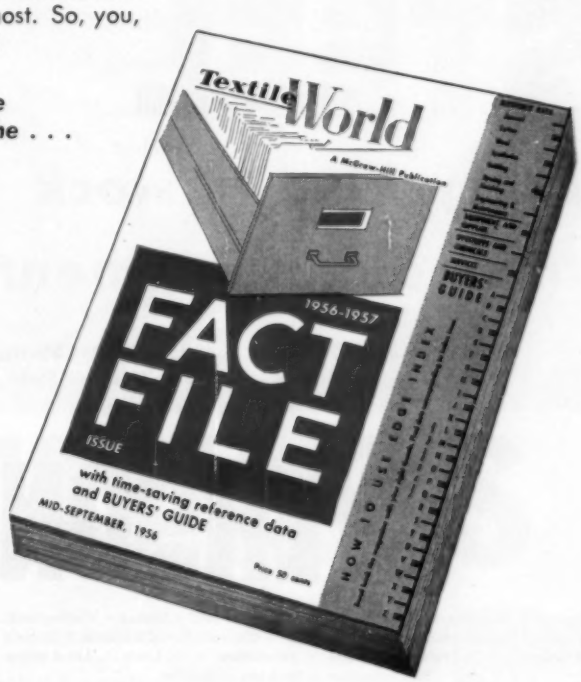
Don't fret—chances are you'll find your answer in the . . .

A SECOND SET OF BRAINS

A walking encyclopedia of reference data . . . *General, Cotton, Wool, Synthetics, Knitting, Dyeing and Finishing, Engineering and Maintenance.* Loaded with worth-their-weight-in-gold charts, tables, formulae.

A complete, classified, easy-to-find-it Buyers' Guide when you have to know, and fast . . . who makes and sells *Machinery and Equipment, Chemicals, Dyestuffs, Supplies, all sorts of Services.* In fact, well over 2,600 items listed!

An all-in-one-place consolidated catalog of data-packed, highly informative material from the leading manufacturers in the field—*covering every variety of product and service.*



NOW... see, try, compare the all-new ORDNANCE OTSA 32", 32-feed high production model for Jersey fabrics

OGA
OTA
OTSA

Sales Representative
MAC. M. ROTHKOPF
317 BUSHWICK AVE.
Brooklyn, N. Y.

• NOW... ORDNANCE brings you a major improvement in circular fully automatic knitting machines — the new OTSA 32" model with 32 FEEDS! For *really* fast output of top quality Jersey with 1" x 1" rib border here is an incomparable production unit... the answer to low unit cost, top operating profit. Check *many* exclusive features such as 2-speed drive, high speed (15 RPM), simplicity and accessibility of all removable and replaceable assemblies, and replaceable forecut walls on both cylinder and dial.

ORDNANCE GAUGE COMPANY
AMBER & HAGERT STS., PHILA. 25, PA.

ORDNANCE GAUGE
CIRCULAR FULLY AUTOMATIC KNITTING MACHINES

HAE OG 362-357

STEEL

Every kind in stock

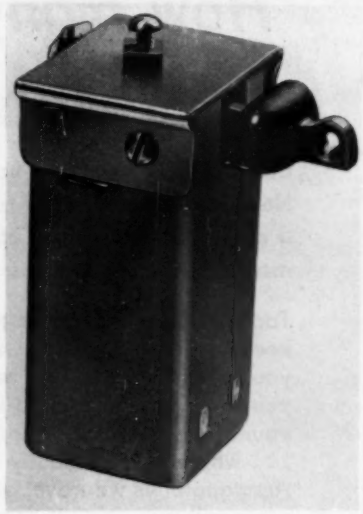
Immediate shipment

Principal Products: Bars, Structurals, Plates, Sheets, Tubing... Carbon, Alloy and Stainless Steels, Machinery and Tools, etc.

RYERSON

Joseph T. Ryerson & Son, Inc. Plants at: New York • Boston • Wallingford, Conn. • Philadelphia • Charlotte, N. C. • Cincinnati • Cleveland • Detroit Pittsburgh • Buffalo • Chicago • Milwaukee • St. Louis • Los Angeles San Francisco • Spokane • Seattle

CONTINUED FROM PAGE 164

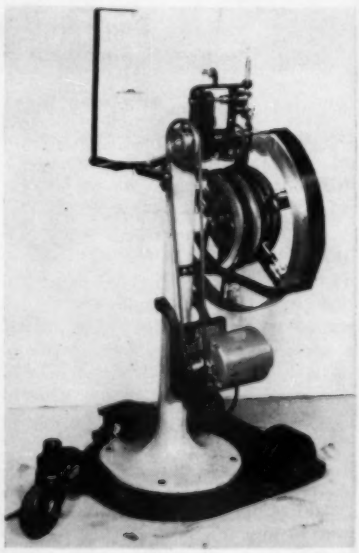


Shunt Magnet

Designed for use with its K. A. electrical warp stop motion, a new shunt magnet has been announced by Draper Corp., Hopedale, Mass. Called the No. 87 shunt magnet, it has a coil wound on a solid one-piece nylon bobbin, and the shunt is securely fastened to the bobbin head.

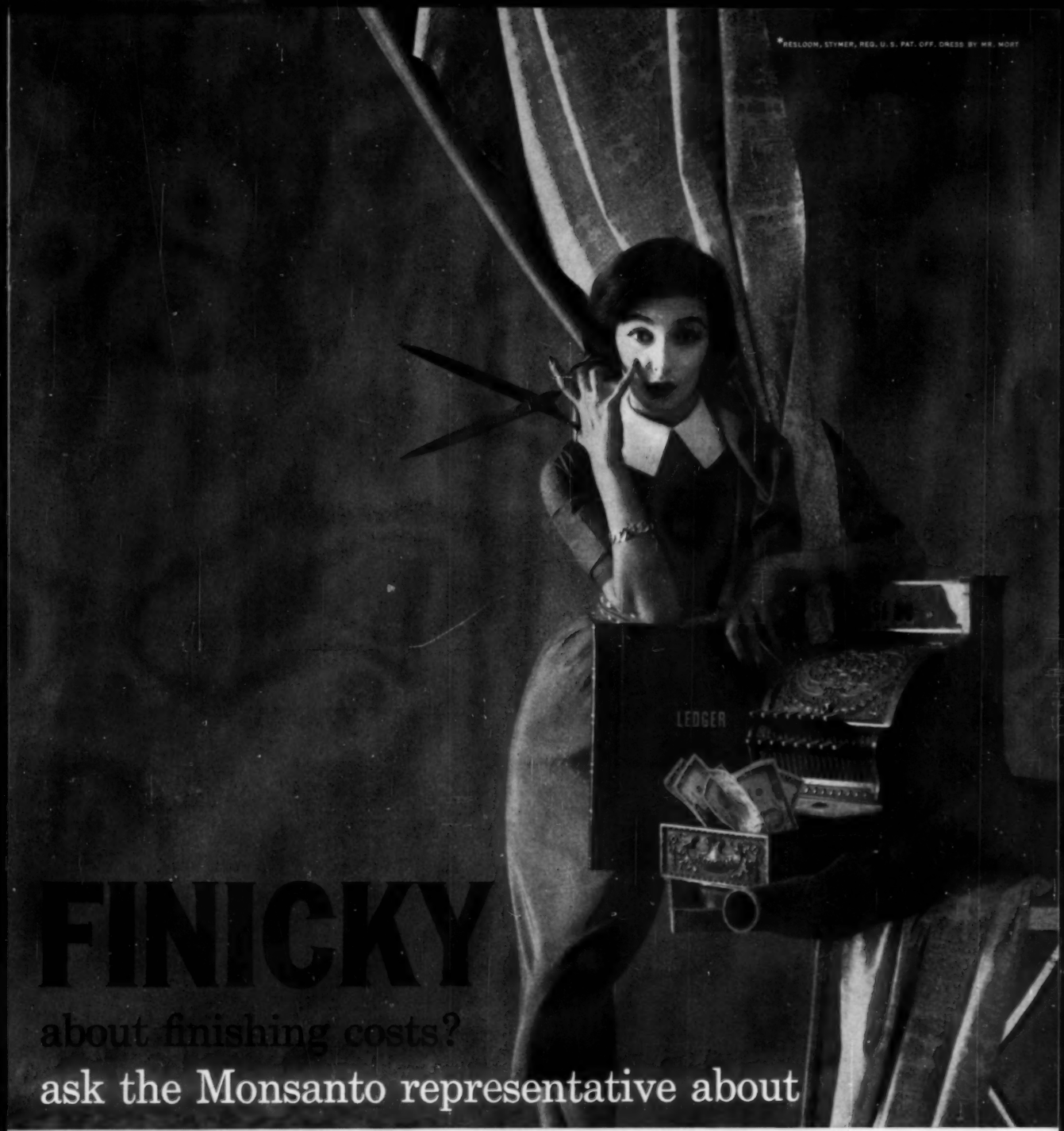
A lock spring holds the coil firmly in place to insure correct positioning of coils and to simplify replacement. Operating failures due to vibration are minimized.

Circle T-25 on Reader-Service Card



Sewing Machine

A piece-end sewing machine has been developed by Dinsmore Mfg.



FINICKY

about finishing costs?

ask the Monsanto representative about

"AC" CATALYSTS

Every performance advantage of the Monsanto Catalyst AC series has dollars-and-cents value for cost-conscious finishers.

Tick them off—from longer resin bath life to faster, more completely uniform curing of melamine, urea, and other thermosetting finishing resins. You cut resin add-on and minimize the danger of amine odor formation and residual formaldehyde. AC Catalysts are compatible with all modifying agents. They allow full development of fabric properties.

Ask your Monsanto representative how you can squeeze the most profit out of your finishing operations. For technical literature and samples, write Monsanto Chemical Company, Plastics Division, Room 1903, Springfield 2, Mass.

MONSANTO

Other outstanding Monsanto Textile chemicals are: RESLOOM E-50 . . . for outstanding dimensional stability and wrinkle recovery . . . with no stiffness or harshness. STYMER* S . . . a tough, uniform, flexible size for filament acetate.*

If You Are Confused by Conflicting Claims about DRAWING

Make a Mill Test Before You Buy

It will pay you to check claims against mill performance before you buy ANY drawing equipment—either as changeovers or new frames. We suggest that you install Ideal Feathertouch Drawing* and any other make or makes, side by side, and keep comparative records on:

1. **Consistent operating speeds**
2. **Total production per week**
3. **Drawing sliver strength and evenness**
4. **Operating and maintenance costs**
5. **Ends down in spinning and weaving**
6. **Versatility**
7. **Overall production efficiency**

...Compare original costs, too

Ideal Welcomes Mill Comparisons on any basis

*Patent Nos. 2,610,363; 2,490,344; 2,412,357; 2,700,797. Other patents pending.

Ideal Industries, Inc.
Bessemer City, N. C.

The Plus "Ingredient" That Makes A Difference

You will find no secret additive in Victor Mill Starch as a claim for superiority. Dependable uniformity, attained through quality controls, has been responsible for the growing preference for Victor Mill over the years.

But there is one intangible element important to you. That is the group experience and technical knowledge of Keever sales-service men.

Mill problems are thoroughly discussed in staff meetings. The combined contact and study of more than 120 years is backed by a team of textile engineers, chemists and technicians to offer you our most valuable stock in trade--Keever service.

Charles C. Switzer, Vice President
TEXTILE SALES DIVISION
1500 S. C. NATIONAL BANK BLDG.
GREENVILLE, SOUTH CAROLINA

THE KEEVER STARCH COMPANY
GENERAL OFFICES - COLUMBUS, OHIO
Processors of corn, wheat and blended starches for industry since 1898

Look Behind

VICTOR Mill Starch

A KEESTAR PRODUCT

the weaver's friend

For more data, write this page number on Reader-Service card. →

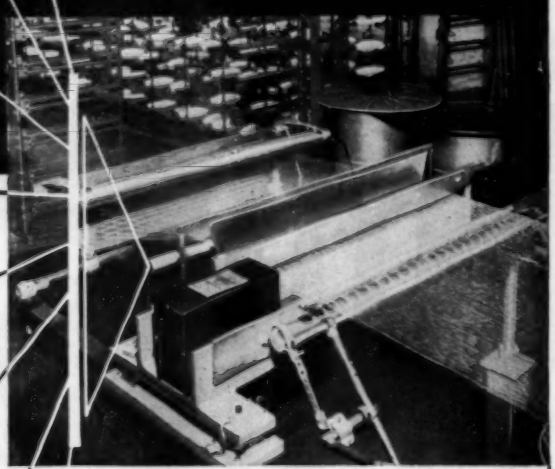
100% INSPECTION

Lindly *automatic* yarn inspector

guarantees the relative quality of warped yarn for warp knitted cloth or woven cloth fabrics by establishing **The Lindly Count.**

Accurately and economically, the Lindly Automatic Yarn Inspector detects yarn faults. Similarly, it sets up a count or stop motion on those faults that are larger than your operation will permit.

YOU DETERMINE QUALITY . . . AND YOU CAN STATE THAT QUALITY IN TERMS OF **THE LINDLY COUNT**



Lindly Automatic Yarn Inspector inserted in a warping operation.

OTHER FEATURES—Improve quality through controlled tension during warping . . . improve quality of finished woven or warp knitted fabrics . . . assure more even dyeing.

FOR FULL INFORMATION ON THE LINDLY AUTOMATIC YARN INSPECTOR, WRITE OR CALL FOR LITERATURE . . . AND USE THE LINDLY ADVISORY SERVICES WITHOUT OBLIGATION.

It Pays to Know The Lindly Count

LINDLY & COMPANY, Inc.

248 HERRICKS ROAD • MINEOLA, NEW YORK

Co., Salem, Mass. A cloth wheel has six pairs of pins that feed the cloth to a heavy-duty gear-type sewing head.

The pins are retracted by a cam in the cloth wheel to strip the cloth automatically. The single chain stitch can be adjusted to make from seven stitches per inch up to a single stitch $\frac{3}{8}$ in. long.

Circle T-26 on Reader-Service Card

All-Year Grease

Gulf Oil Corp., Gulf Bldg., 7th Ave. & Grant St., Pittsburgh 30, Pa., is producing a multipurpose lithium-base grease. Only one grease has to be stocked during summer and winter. The grease does not drip and cuts off clean at the nozzle when it is applied to grease fittings.

Circle T-27 on Reader-Service Card

Strapping Machine

A high-speed electric strapping machine capable of strapping, bundling, or reinforcing is available from the Permacel Tape Corp., New Brunswick, N. J. The machine applies more than 700 straps per hour and compresses the material to be strapped at the same time. The complete wrap is applied automatically.

Circle T-28 on Reader-Service Card

Evaporative Condensers

Evaporative condensers with capacities of 20 through 150 tons at 75° wet bulb are available from Acme Industries, Inc., Jackson, Mich. The condensers have several construction features for ease of installation and operating efficiency.

Circle T-29 on Reader-Service Card

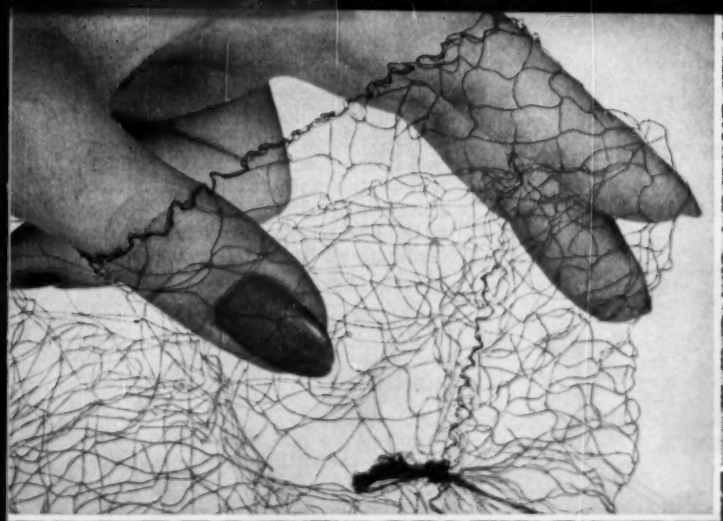
Small Air Valve

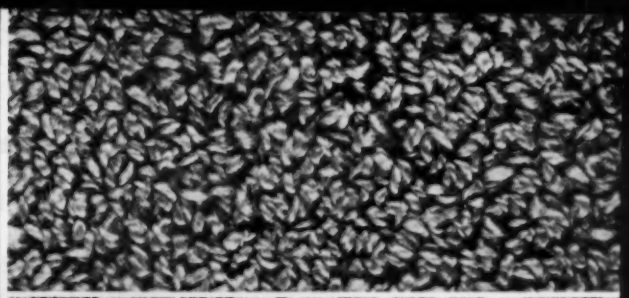
A valve to be used as directional, interlocking, transfer, sequence, or shutoff valves has been announced by Industrial Products Div., Westinghouse Air Brake Co., East Pittsburgh, Pa. The $\frac{1}{4}$-in. D. Pilotair valve works in pneumatic control systems with pressures as high as 250 psi. and temperatures as high as 200° F.

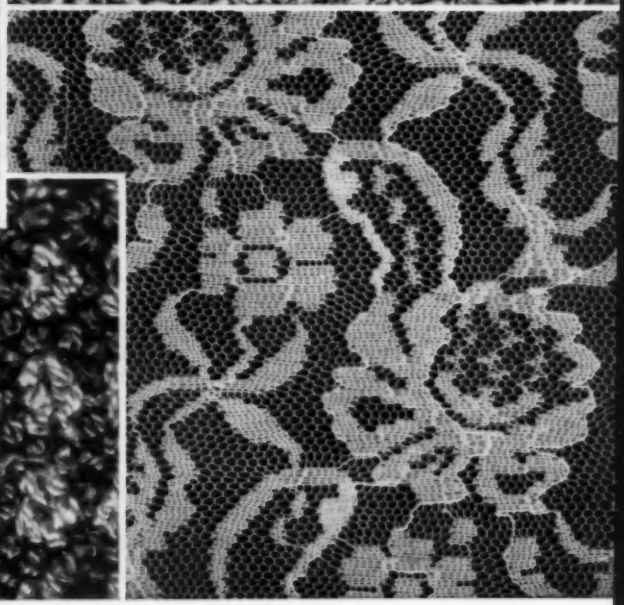
Circle T-30 on Reader-Service Card

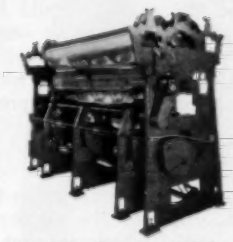
Valve Plate

A plate with restricted port open-









World's fastest 10-bar Raschel knitter

—from hairnets to heavy carpet

ALL KNITTED ON THE KIDDE KNITTER

Why is the Kidde Knitter the most widely used Raschel type machine in the world? The answer is exceptional versatility coupled with outstanding speed and reliability.

The range of gauges of the Kidde Knitter will produce anything from the sheerest tulle to heavy carpet — all with equal dependability. And special attachments make it even more versatile:

- A sinker bar produces tighter stitches . . . eliminates selvage troubles.
- A power let-off attachment for controlling rubber beams improves quality of elastic fabrics.
- A power yarn feed assures uniform quality at high speeds and permits the use of large warps.

These are just a few of the advantages that account for the popularity of the Kidde Knitter, both with the knitter who specializes in one type fabric and the knitter who depends on flexibility to meet the requirements of his trade. If you specialize in any one of the following fabrics . . . elastic fabrics, tulle and various types of net, lace and lace edgings, shoe cloth, laundry nets, sport shirtings or carpeting . . . or if you need versatility encompassing many of these types . . . the Kidde Raschel Type Knitter can give you faster, more economical, more dependable production.

SEND FOR FABRIC SAMPLES

We will gladly send you swatches of fabric and complete information on the range, speed and quality of production possible on the Kidde Knitter. Write today for details. Dept. KA3

Kidde

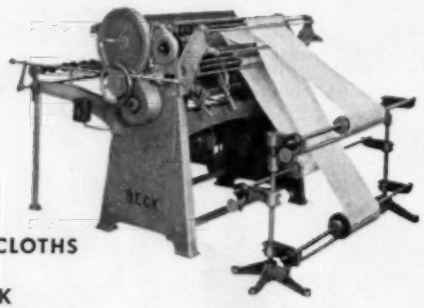
TRICOT AND RASCHEL MACHINES • TRICOT WARPERS • HORIZONTAL WARPERS
BEAMERS • CREELS • SLASHERS • WINDER-REDRAWS • TENSOMETERS

MANUFACTURING CO., INC. — 42 FARRAND STREET — BLOOMFIELD, NEW JERSEY

SOUTHERN OFFICE — 267 W. MAIN ST., GASTONIA, N. C.

The word KIDDE is the trademark of Walter Kidde & Company, Inc., and its affiliated companies.

Cuts any textile from rolls to sheets . . . *automatically*



- TOWELLING
- PILLOW CASES
- DIAPERS
- WIPING CLOTHS
- DUCK
- CANVAS

Fast low-cost cutting—quick sheet-size changeover —reduced waste! These advantages are yours with the Beck Automatic roll sheet cutter. Easy to set-up. Simple to operate. Cuts just about any textile or synthetic. Write for illustrated catalog.

CHARLES BECK MACHINE CORPORATION
50 CHURCH ROAD, KING OF PRUSSIA, PA.

Pacemakers since 1864 in the ENGINEERED APPLICATION of Sheet Cutters and Slitters

AT YOUR SERVICE

SPECIALIZED ENGINEERING
SPECIALIZED EXPERIENCE
SPECIALIZED MACHINERY
FOR
TWISTING • FORMING
STRANDING • BUNCHING
COTTON • JUTE • MANILA • SISAL
NYLON • DACRON • ORLON • SARAN
PAPER • POLYETHYLENE • GLASS

TEXTILE • WIRE • CORDAGE and OTHER INDUSTRIES

HASKELL-DAWES
MACHINE CO., INC.
2231 E. Ontario Street
Philadelphia 34, Pa.

ings for use with its Rotogate control valves has been announced by Fischer and Porter Co., Hatboro, Pa. Insertion of the restricted port does not affect the length of the valve stroke or the flow characteristics and can be used with all Rotogate valves.

Circle T-31 on Reader-Service Card

CONTINUED ON PAGE 228

POINTERS FOR SUPERVISORS

CONTINUED FROM PAGE 151

to entrust any part of the job to someone else—afraid their prestige will suffer or that the assistant will gradually take over the job.

The smart supervisor realizes that the development of the men under him strengthens his own position. It is true that his assistant may get his job, but only because he has been promoted to a better one. Many supervisors have reached a certain position and stayed there. They could have advanced, but there was no one to take their places. So they kept the same position, and the man with a trained replacement got the promotion.

Promote From the Ranks

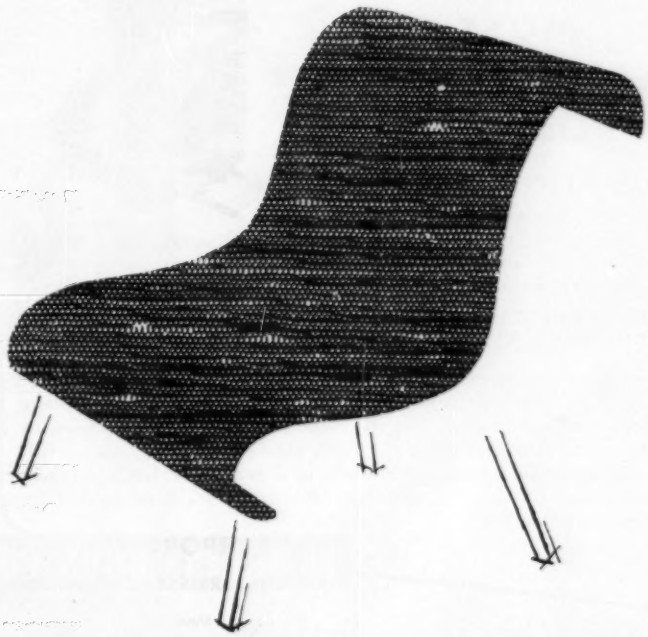
The idea of having an understudy for each key man on the job pays in other ways. The schedule is not disrupted when someone is out sick or on vacation. It is not necessary to call in someone from another job or shift or to pay report-in pay or overtime. Any time an emergency arises that causes a key man to be absent, whether for a day, a week, or forever, the prearranged shift of manpower can be made without a change of pace in normal operation.

Management and supervisors should give serious thought to this matter of having understudies for key men. It is not always possible to hire experienced replacements. Regardless of how much he knows about the work, a new man must have time to become adjusted to the job. If he is in a supervisory capacity, the job and the workers must also become adjusted to him.

Hiring an occasional outsider is all right. It often brings in new ideas and shakes up some of the old established customs. But the majority of replacements for all supervisory jobs should be from the ranks.

If the men in the mill see no chance for personal advancement, the ones that are promotable will look for employment somewhere else. If this trend continues, an outsider will have to be brought in to fill every vacancy that occurs because there will be no qualified understudies to promote.

BULKED YARNS
OPEN UP NEW TEXTURES WITH ACETATE



From apparel to decorative fabrics, acetate bulked yarn is more important than ever. The reason is Celanese' new bulked yarns that put a new dimension in filament constructions.

Handling as easily and economically as regular filament acetate, Celanese bulked yarns make possible new textures and hand midway between filament and spun—an entirely new feeling in fabric.

Mills now working with our new bulked yarns know the styling impetus they supply. We invite you to see for yourself what has been done and can be done with these exciting Celanese yarns.

Available on 2 lb. cones in Bright Natural, Black, Celaperm and (in some deniers) plied Jaspes.

Celanese® Celaperm® acetate

CELANESE CORPORATION OF AMERICA, TEXTILE DIVISION, CHARLOTTE, N. C.

DISTRICT OFFICES

180 Madison Ave., New York 16, N. Y.
Room 10141, Merchandise Mart Bldg., Merchandise Mart Plaza, Chicago 54, Illinois
200 Boylston St., Chestnut Hill 67, Mass.

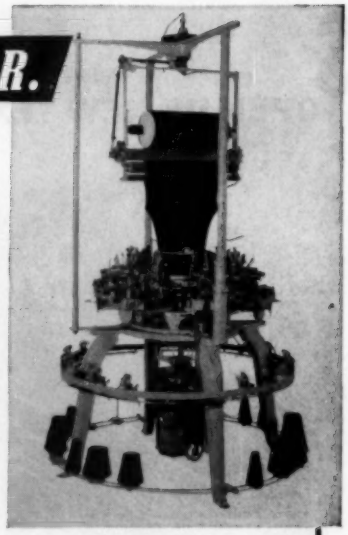
Celanese CONTEMPORARY FIBERS

For more data, write this page number on Reader-Service card. →

ALL NEW...

TOMPKINS S-1 JR.

MAKES THE MOST PERFECT CLOTH POSSIBLE



HERE'S A TYPICAL EXAMPLE...

Model S-1 Junior making fleece with 400-lbs. of Carter 26's and 8's —five feeds, 18" cylinder, running time 68-turns per minute . . .

- NO IMPERFECTIONS
- NO BROKEN NEEDLES

You can produce any class of cloth in the wide range of circular spring needle knitting—in greater quantity, with less waste and less needle breakage—on the New S-1 Junior! It gives you the proven Tompkins system in fully modern form . . . with triple stop motions, furnishing wheels, new gearless drive, automatic oiler and air cleaner! Get the full story now . . . be among the first to profit!

TOMPKINS BROS. CO.

623 ONEIDA ST. • SYRACUSE 4, N. Y.

Makers of Circular Spring and Latch Needle Knitting Machinery...Since 1846

DURANT DOFFMETER

Model 3-DM
Alaska Gray and Seal Brown finish

ELIMINATE OVERRUNS

Warns operator or stops machine when run is completed. Yes — eliminates annoying underruns, too!

Specifically Designed for LOOM APPLICATIONS

The Durant Doffmeter is a compact, predetermined counter designed to cut off the loom or signal when the preset number of yards is reached. Eliminates cut marks and waste ends by assuring uniform yardage . . . simplifies inventory control.

Present day high costs make the installation of Durant Doffmeters on every loom a practical money saving investment. Plan now . . . write or contact us for detailed information.

UNIFORM LENGTHS

Easy, accurate way to assure uniformity in lengths of cloth or yarn.

MAXIMUM PRODUCTION

A Durant Doffmeter takes the responsibility — operator can do other work.

DURANT MFG. CO.

1931 N. Buffum St., Milwaukee 1, Wis.
31 Thurbers Ave., Providence 5, R. I.
Representatives in Principal Cities

Send for Catalog No. 501

PRODUCTIMETERS SINCE 1879 *Count Everything*

CONTINUED FROM PAGE 226

Filter Pump

An addition to its line of self-priming filter pumps has been announced by Sethco Mfg. Co., 70-78 Willoughby St., Brooklyn 1, N. Y. Called the Model LS1N-20, the stainless-steel pump has a 200- to 300-gal.-per-hr. filtering capacity.

Circle T-37 on Reader-Service Card

Platform Truck

A sit-down type electric-powered low-lift platform truck has been introduced by Elwell-Parker Electric Co., 4205 St. Clair Ave., Cleveland 3, Ohio. The truck features sit-down handling and simplified controls that reduce operator fatigue and increase efficiency.

Circle T-38 on Reader-Service Card

Valve Control

An attachment for its Speed King valves has been announced by Valvair Corp., 454 Morgan Ave., Akron 11, Ohio. Designed for use on three- and four-way Speed Kings with internal and external pilot supply, the attachment regulates the flow through the valve to and from the cylinder.

Circle T-39 on Reader-Service Card

Floor-Cleaning Machine

A combination floor-cleaning machine is available from S. C. Lawlor Co., 124 N. Aberdeen St., Chicago 7, Ill. Called the Lawlor-Matic, the machine does a complete job of scrubbing, rinsing, and picking up the dirty water. From 2,000 to 15,000 sq. ft. per hr. can be cleaned, depending on the speed the operator sets the machine.

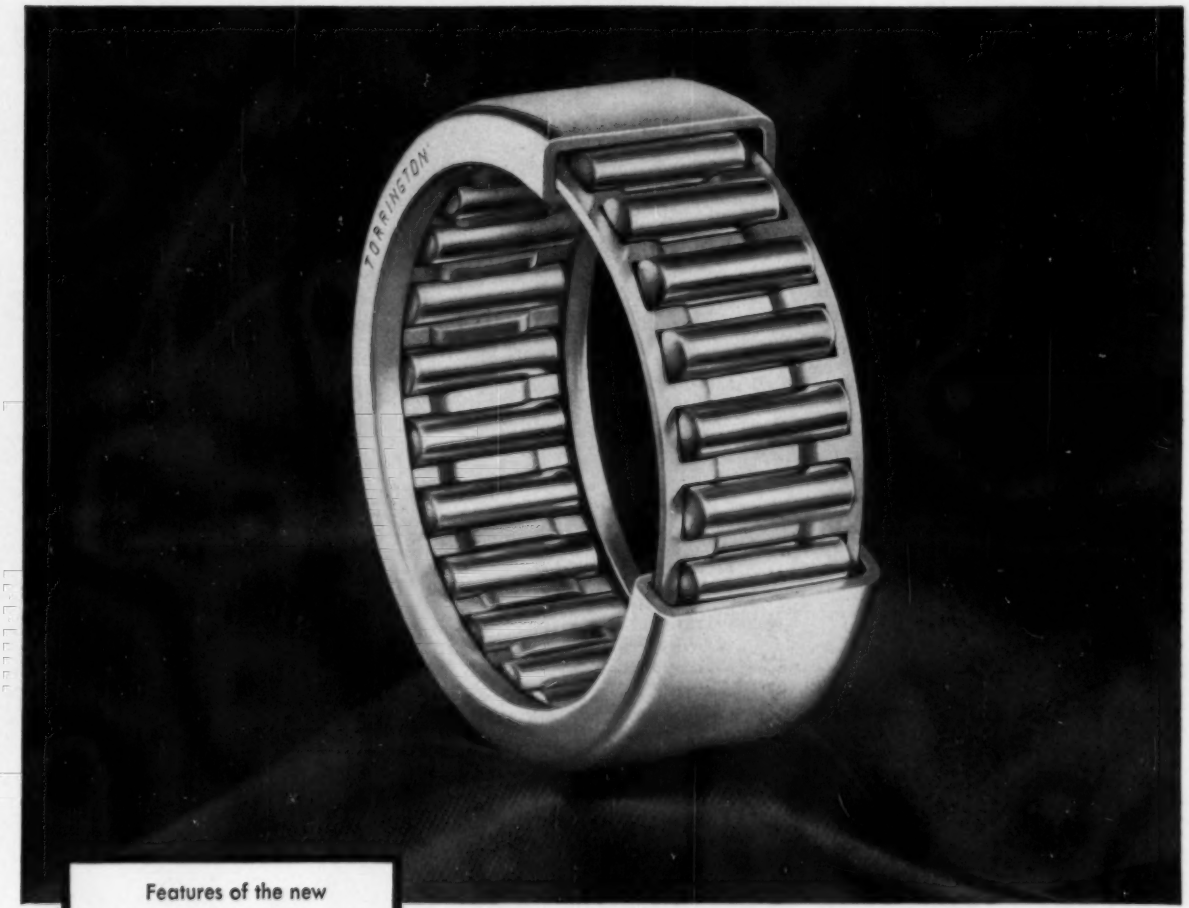
Circle T-40 on Reader-Service Card

Radiography Unit

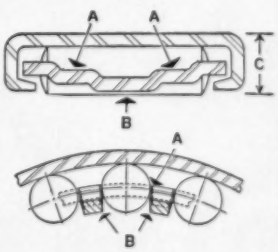
The Norelco MG 260H X-ray radiography unit has been announced by the Research & Control Instruments Div., North American Phillips Co., Inc., 750 S. Fulton Ave., Mount Vernon, N. Y. The unit fits into the trunk of an automobile and is designed for rapid inspection of welds, pipe lines, power plants, etc.

Circle T-41 on Reader-Service Card

CONTINUED ON PAGE 230



Features of the new
TORRINGTON DRAWN CUP ROLLER BEARING



- rollers end-guided at pitch line (A)
- shaft-riding retainer (B) designed to permit lubricant circulation
- high capacity in small cross section (C)
- long pregreased life
- efficient at high speeds
- mounted by press fit
- simple housing design
- low unit cost

INTRODUCING

a new low-cost precision roller bearing...

THE TORRINGTON DRAWN CUP ROLLER BEARING

For the first time, the advantages of drawn cup outer race construction are available in a precision roller bearing.

This compact, lightweight bearing consists of spherical end needle rollers, a one-piece hardened steel retainer and case-hardened thin-section outer race. Designed to run on a hardened shaft or with an inner race, this new series takes a press fit in a simple housing without snap-rings or shoulders.

Highly efficient roller guidance and lubrication are outstanding features. The shaft-riding retainer contacts the roller ends at the pitch line where guidance can be obtained with the least effort. The design provides ample storage for lubricant and promotes its circulation.

These features make the new bearing particularly suited to applications requiring compactness with precision, high-speed endurance or long pregreased life.

For information on sizes now available and for application assistance, call on our Engineering Department or write for the new bulletin, "Torrington Drawn Cup Roller Bearings." THE TORRINGTON COMPANY, Torrington, Conn. — and South Bend, Ind.

TORRINGTON BEARINGS

District Offices and Distributors in Principal Cities of United States and Canada

NEEDLE • SPHERICAL ROLLER • TAPERED ROLLER • CYLINDRICAL ROLLER • THRUST • BALL • NEEDLE ROLLERS

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This DISTINGUISHED PUMP will win your RESPECT
TYPE OJ
AURORA® Horizontally Split Case, Double Suction, Single Stage Centrifugal Pump
For general water supply for municipalities, industries, office buildings, institutions—also—for handling liquids, chemical solutions, oils etc., in a wide variety of industries. Write for Bulletin 105-BM for further details.
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GREATER PROTECTION to your AIR LINE!

M-B

AUTOMATIC WHIRL-A-WAY AIR LINE FILTER MODEL W-1 and TRAP

RIBBON TYPE FILTERING UNIT removes solids .00039 and larger. Transparent plastic bowl makes filtered foreign matter visible. Gives maximum protection to all types of Lint blowers, Blow-off Hoses and various air-operated controls.

The TRAP ejects water automatically. Operates upon accumulation of 3 to 4 ounces. Discharges in less than 5 seconds. Assures dry air in pneumatic system at all times. Non-corrosive throughout.

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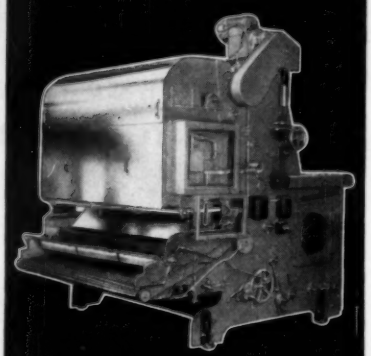
46 VICTOR AVE., Div. 16
DETROIT 3, MICHIGAN

Geo.S.HARWOOD & Son



SPECIALISTS IN TEXTILE FEEDING MACHINERY SINCE 1863

50 LAGRANGE STREET
WORCESTER 8, MASS.

EQUIPMENT & SUPPLY NEWS

CONTINUED FROM PAGE 228

Explosionproof Motor

A fully enclosed explosionproof electric motor is announced by Electro Dynamic Div., General Dynamics Corp., Bayonne, N. J. Designed for use where flammable gasses and volatile liquids are present, the motors are available in ratings of 1 to 30 hp.

Circle T-42 on Reader-Service Card

Lift-Truck Accessories

Two accessories are available for Towmotor lift trucks, according to Towmotor Corp., 1226 E. 152nd St., Cleveland 10, Ohio. The Ram is a device for handling open-center loads such as coils of wire, rolls of paper, etc. The Unloader is a compact pusher device for the mechanical unloading of materials. The two accessories can be used as a team on most Towmotor fork-lift trucks.

Circle T-43 on Reader-Service Card

Screw Anchor Kit

A kit containing 100 No. 8x¾-in. plastic screw anchors, 100 sheet-metal screws, and one ⅜-in. masonry drill, all packed in a transparent plastic box, is on the market. The manufacturer is Holub Industries, Inc., Sycamore, Ill.

Circle T-44 on Reader-Service Card

Subminiature Clutch

A positive-displacement drive that transmits up to 15 inch-ounces of torque at speeds to 1,800 rpm. has been announced by Precision Specialties, 1342 E. 58th St., Kansas City 10, Mo. An all-purpose model, the clutch can be used for any single-revolution, overrunning, nonreversing, or indexing application within its capacity.

Circle T-45 on Reader-Service Card

Automatic Control

An automatic process control to safeguard the handling of liquid fuels and flammable liquids has been announced by The Hewson Co., Inc., 443 Broad St., Newark 2, N. J. The unit checks the adequacy of all grounds and/or bonding connections and, if unsatisfactory, automatically prevents loading or transfer operations.

Circle T-46 on Reader-Service Card

CONTINUED ON PAGE 236

7

times the output!

This sensational development for economy in production, time and costs means just that. Furthermore power consumption is reduced to a seventh.

THE SIDNEY & E. SCRAGG

FALSPIN

BULK STRETCH YARN UNIT

for fitting on new or existing machines, in one process surpasses the many other processes used in the manufacture of bulk stretch yarn, giving at least 7 times the output.
Overall Power Consumption per Machine is a fraction of that consumed by the normal Uptwister.
TORQUE stretch yarns in quantity, high speed false-twist method with precision quality control.
Production on 2 decks as in normal uptwisting.
Complete heat-setting gives maximum bulk and stretch.
Results equal to original multi-stage process.
Suitable for Processing NLYON, "TERYLENE", PERLON, TRIACETATE.

Licensed Manufacturers of FLUFLON and AGILON MACHINES

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Telegrams: *'PARKMIL', MACCLESFIELD*

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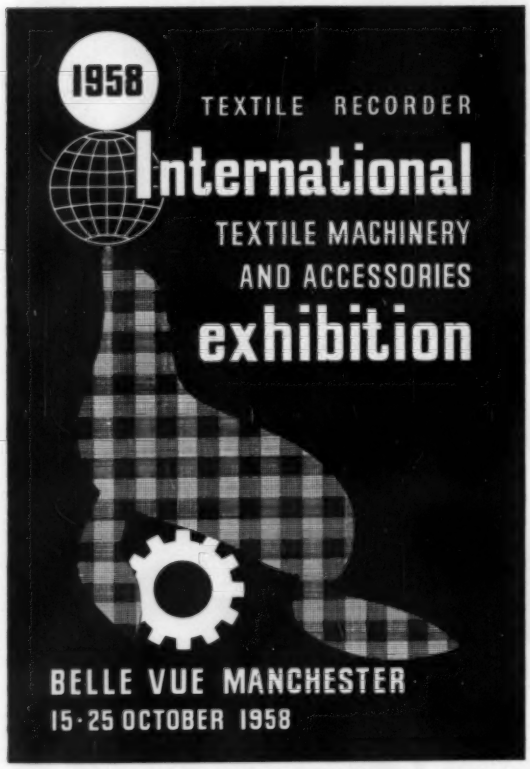

It's time to decide . . .

. . . to exhibit at the next international Textile Machinery Exhibition which will be held at Belle Vue, Manchester, from the 15th to the 25th October, 1958

Enquiries are coming in every day from firms in many countries who are anxious to secure their space at this important **international** event, and indeed, enquiries were being received by the organisers even before the close of the last event – the International Knitting Machinery Exhibition held in the Granby Halls, Leicester, in October, 1956.

The 1958 exhibition will be the fifth in the post-war series of exhibitions organised by Textile Recorder (Machinery & Accessories) Exhibitions Limited, a series marked by a steady increase in size and scope since its inception. This particular event will be devoted to machinery and accessories used in the production of woven textiles, just as the 1956 event concentrated on the machines which serve the knitting industry, and, of course, ancillary equipment used in textile mills will also be on show

Belle Vue has again been chosen as the venue for the 1958 Exhibition, but exhibitors and visitors will find a greatly extended and improved Belle Vue hall; plans for providing stand space for more exhibitors than ever, and all the amenities that a great international exhibition requires, are nearing completion

Remember the date
15th-25th OCT. 1958
. . . at BELLE VUE
MANCHESTER
ENGLAND

and if you have something to show that is of interest to textile producers make certain of your space NOW by sending for the prospectus to:

TEXTILE RECORDER
(Machinery & Accessories) Exhibitions Limited
OLD COLONY HOUSE, SOUTH KING STREET
Manchester 2 ENGLAND

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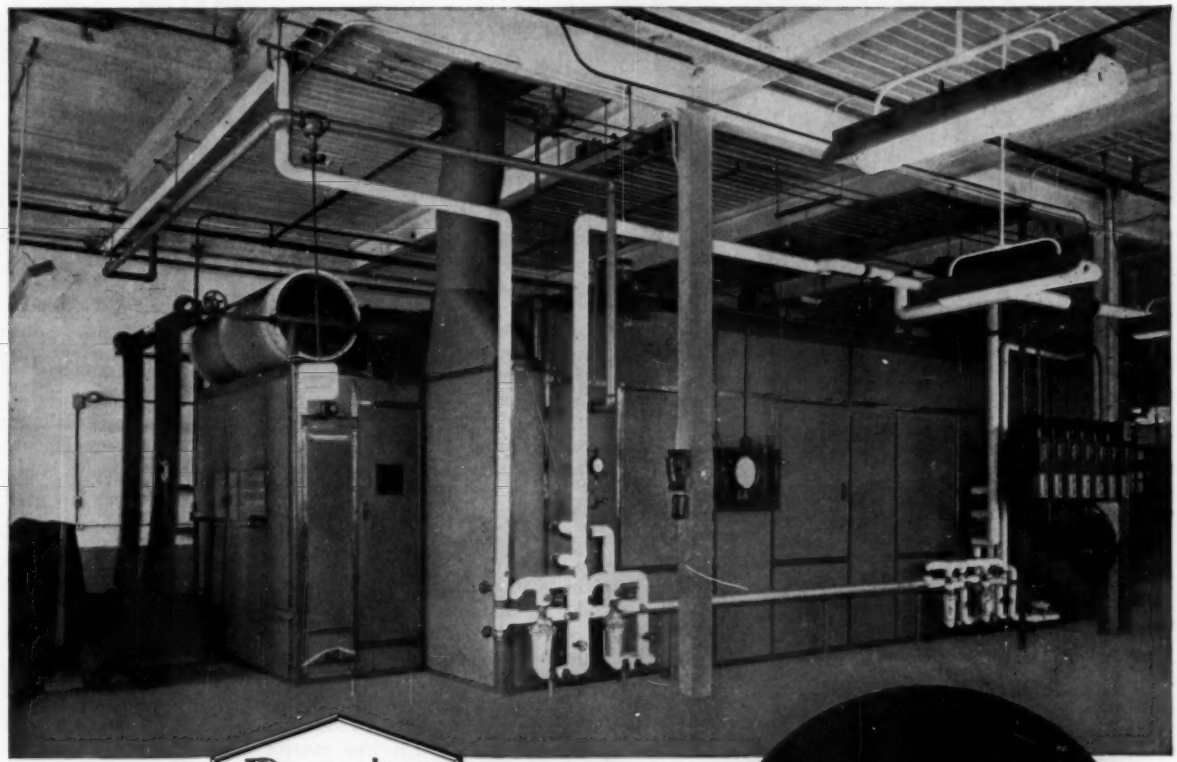
CURE TEXTILE FABRICS AT A PROFIT!



Installation view of Proctor Loop Curer

THE Proctor

LOOP CURER and ROLLER CURER

These rugged, high-capacity machines feature the latest design and construction improvements—all geared to increase your profits. Units can be combined with existing equipment to meet your exact requirements. For fabrics that will not handle properly in loop, the roller curer is recommended. Recent developments for this machine also include improved air distribution, flexibility in holding capacity, and no-stretch operation. These machines are the result of long experience in supplying machinery to the textile industry. For the complete story of the profit-making opportunities offered by Proctor, write today for latest information bulletins.

- GREATEST CURING UNIFORMITY
- IMPROVED DESIGN
- MAXIMUM CAPACITY WITH MINIMUM POWER REQUIREMENTS
- FLEXIBILITY OF OPERATION
- SIMPLIFIED INSTALLATION

PROCTOR & SCHWARTZ EQUIPMENT FOR THE TEXTILE FIELD

AUTOMATIC BLENDING SYSTEMS • WEIGHING FEEDS • PICKERS • SHREDDERS • BALE BREAKERS • SYNTHETIC CARDS • GARNETTS • DRYERS FOR FIBROUS MATERIAL • YARN DRYERS • HOT AIR SLASHER DRYERS • CLOTH CARBONIZERS • ROLLER DRYERS AND CURERS • LOOP AGERS FOR PRINT GOODS • TENTER HOUSINGS • OPEN-WIDTH BLEACH SYSTEMS FOR WOVEN FABRICS • MULTIPASS AIRLAY DRYERS • NYLON SETTING EQUIPMENT • CON-O-MATIC WASHERS • CONTINUOUS BLEACH SYSTEMS FOR PRODUCING TUBULAR KNITS • EQUIPMENT FOR "SEDIMIZED" ® SHRUNK-TO-FIT FABRICS • CARPET DRYERS

Proctor **PROCTOR & SCHWARTZ, INC.** Philadelphia 20, Pa. Manufacturers of Textile Machinery & Industrial Drying Equipment.

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Is this the World's

Toughest Test

For Brushes?

Jenkins' METLKOR Scrubber Brush

When Dewey and Almy Chemical Company developed their high-speed blanket printing process "DAREX VERSA-PRINT" a difficult problem arose. Colors picked up by the "DAREX" embossed blanket had to be removed with each turn around . . . colors that contained gums, resins, rubbers, etc. They had to be removed by solvents, detergents and high pressure water sprays at washing and drying speeds of 180 yards a minute. A special automatic machine, the "DAREX" washer was developed, in which seven specially designed Jenkins' METLKOR brushes are used.

The DAREX Model ND Blanket Washer Unit

CRUCIAL TEST FOR JENKINS' BRUSHES

"It is difficult to imagine conditions more severe than for the first three scrubbing brushes in this machine," states Mr. H. H. Bailey, Sales Manager of Printing Products Division of Dewey and Almy Chemical Co., Div. of W. R. Grace and Co. "Temperatures range from 40° to 212°F. Vapors range from saturated steam to mixtures including high percentages of mineral and organic solvents, caustics and acids. At speeds up to 1300 rpm the brushes must not vibrate. Jenkins' brushes are more than equal to these requirements and provide long and satisfactory life."

Specify Jenkins' METLKOR . . . the original . . . the best Metal-Core Brush

METLKOR®

CYLINDER BRUSHES

and **LIFEWOOD®** WOOD BACKED BRUSHES

M. W. JENKINS' SONS, INC.

— Serving Industry for 80 Years —

131 Pompton Ave. Cedar Grove

Essex County, N. J., CEnter 9-5150

18 Tips To Make Conveyor Belts Last Longer

For longer conveyor-belt life, check your present practice against these 18 suggestions:

1. **Select the proper belt.** Choose a belt that is designed for the materials to be carried, temperature encountered, and tension required.

2. **Design the supporting structure carefully.** Check the diameter of the pulleys, spacing of idlers, take-up mechanism, and load point.

3. **Avoid handling damage.** When a heavy roll of belting is received from your manufacturer, don't drop it off the truck or railroad car. Skid, roll, or lift it off.

4. **Store extra belts properly.** If a belt is not installed as soon as you receive it, store it out of the sunlight, away from hot pipes, stoves, and radiators.

5. **Plan the installation.** Threading the belt over idlers and pulleys is critical. Avoid bending the belt sharply. Do not drag it over sharp, rough surfaces. Before a belt is run, check for tools accidentally left on the return side.

6. **Check belt alignment.** Align supporting structures with a transit. Misalignment causes the belt to run crooked, and edge wear results.

7. **Load belts correctly.** Load material on the belt at the same speed of the belt and in the same direction of travel. Place the load on the middle of the belt and not on the sides.

8. **Avoid impact from lumps.** Load hard, lumpy material on top of fine material whenever possible. Direct the load to strike the belt between idlers if possible.

9. **Guide material with skirt boards.** The skirt boards should not touch the belt. Increase the distance between the board and the belt in the direction of belt travel so that wedged-in lumps free themselves.

10. **Appoint a supervisor of maintenance.** Have one man responsible for repairs and adjustments.

11. **Inspect the belt periodically.** Inspect the belt for rips, tears, and worn spots before damage can be done. Check the splices frequently.

12. **Maintain a belt repair kit.** Keep tools, splicing fasteners, rubber cement, patching rubber, and rip plates ready to make belt repairs as soon as a belt defect is discovered.

13. **Cover the return side of the belt with a deck.** Keep spilled material off the return side of the belt by covering the belt with a wood or steel deck. Brushes or scrapers are helpful.

14. **Cover outdoor belts.** Use a wood or metal cover for outdoor belts to protect them from the sun and water.

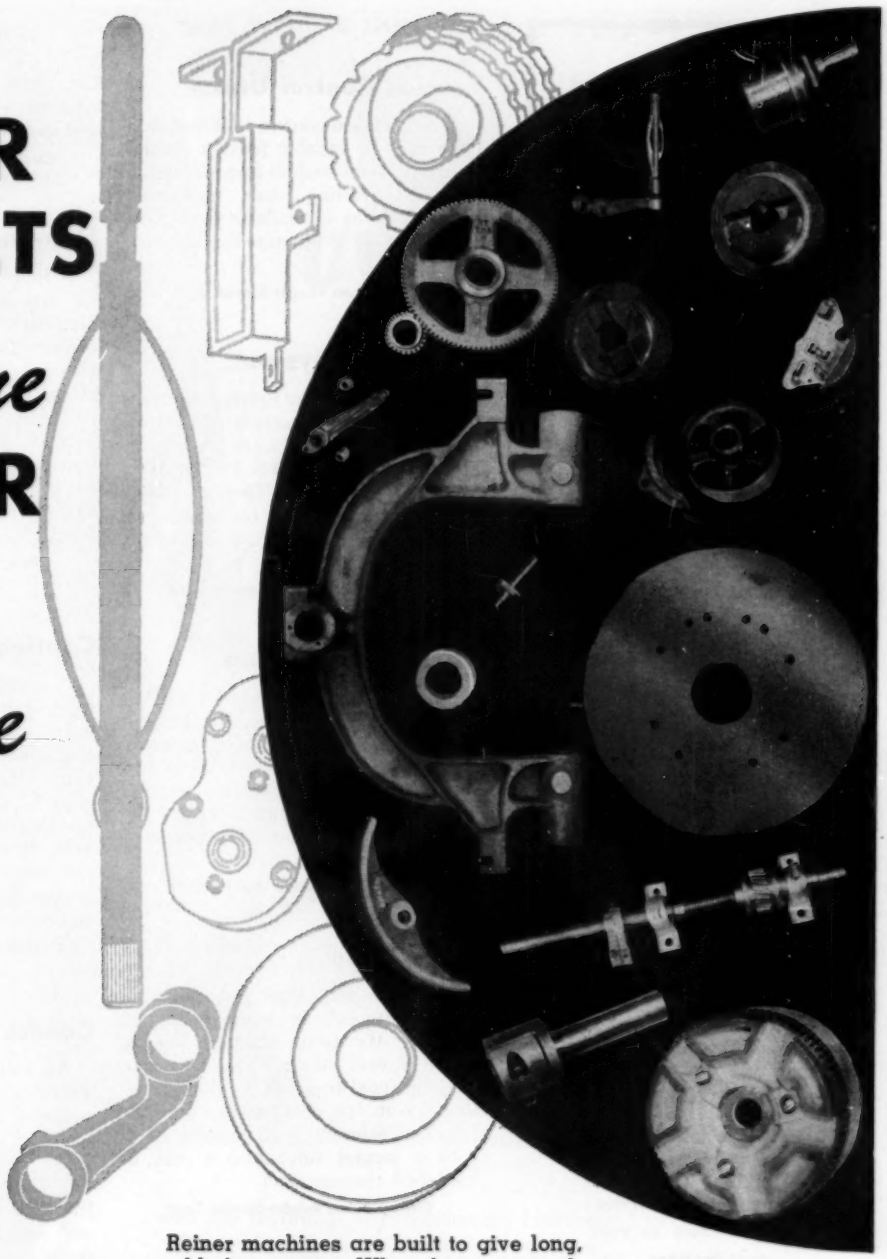
15. **Keep cost records.** Continuous records of maintenance and repair cost for the total tonnage handled indicates service quality.

16. **Lubricate the belt wisely.** Check idlers regularly for adequate grease, but avoid excess grease because it smears the belt and shortens belt life.

17. **Control conveyors together.** If several conveyors are used in a series, use an automatic control to shut off belts to prevent pile-ups of material.

18. **Develop belt safety rules.** Provide guards around drives; prohibit employees from riding on belts; install necessary shut-off switches; equip the belt with an apparatus to discharge static electricity; and control dust at transfer points with exhaust hoods. *Newell Perry, Thermoid.*

GET BETTER RESULTS WITH *Genuine* REINER *Parts* AND *Service*



Reiner machines are built to give long, trouble-free service. When, however, replacement parts are needed BE SURE TO GET REINER-MADE PARTS—exact duplicates of original equipment.

Nothing works better with a Reiner machine than an original replacement Reiner part.

Same Day Emergency Service

ROBERT REINER INCORPORATED

10 MINUTES FROM TIMES SQUARE

Take Bus Nos. 61 or 67, from Platform No. 60, Port Authority Bus Terminal, 41st Street and 8th Avenue, New York City. Get off at Pleasant Avenue, Weehawken, New Jersey. From there turn left and walk through the underpass up to Gregory Avenue . . . TELEPHONE: UNION 7-0502, 0503, 0504, and 0505. From New York City call LONGACRE 4-6882.

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Can mean a healthier
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ROEBUCK, S. C.

CONTINUED FROM PAGE 230

Tension Control Unit

A dial tension-control unit that provides fixed or variable tension control for applications such as fine-wire winding, film reeling, and high-speed thread winding is available from Dial Products Co., 9 Avenue E, Bayonne, N. J.

Circle T-47 on Reader-Service Card

Bearing Analyzer

The Norelco X-ray Bearing Analyzer is available from Research & Control Instruments Div., North American Phillips Co., Inc., 750 S. Fulton Ave., Mount Vernon, N. Y. The instrument is specifically designed for analysis of lead-tin alloy platings on crankshaft bearings.

Circle T-48 on Reader-Service Card

Instrument Housing

West Instrument Corp., 4363 W. Montrose Ave., Chicago, Ill., has announced a plug-in instrument housing that can be applied to all West instruments. The plug-in feature enables inexperienced personnel to replace the complete temperature controller in 5 secs. without tools.

Circle T-49 on Reader-Service Card

Steam Trap

A steam trap equipped with an integral strainer is being manufactured by Armstrong Machine Works, Three Rivers, Mich. The traps are made in four models of 3,500 to 4,400 lbs. per hr. of condensate. The integral mechanism is all stainless steel with a lapped valve and a seat of hardened chrome steel.

Circle T-50 on Reader-Service Card

Photocopy Machine

A simplified, low-cost photocopy machine is available from Eastman Kodak Co., Rochester 8, N. Y. Called the Verifax Signet Copier, the machine will handle any documents up to and including 8½x14-in. legal size and will produce several copies of any document in 1 min.

Circle T-51 on Reader-Service Card

Steam-Cleaner Jennies

A line of improved steam-cleaner jennies is announced by Hypressure Jenny Div., Homestead Valve Mfg. Co., P.O. Box 348, Coraopolis, Pa. One model operates at 80 to 120 psi. and dispenses 90 gals. per hr.

Circle T-52 on Reader-Service Card

Nonwax Floor Dressing

A long-wearing nonwax floor dressing has been added to the line of floor-maintenance products made by Masury-Young Co., Dept. T.W., Boston 29, Mass. These features are claimed for the dressing: (1) it's easy to apply, (2) has excellent slip resistance, (3) dries to a hard, glossy, transparent film in only a few minutes, (4) resists heel marks, dirt, and water, and (5) can be used on any floor surface.

Circle T-53 on Reader-Service Card

Coating for Metal

A coating to protect metal surfaces from rust and corrosion from salt water, chemical fumes, acids, solvents, and alkalis is announced by Enterprise Paint Mfg. Co., S. Ashland Ave., Chicago 8, Ill. The material is applied in one-coat thicknesses of 12 to 25 mils. It will not soften under heat or pull away from sharp edges or bolt heads. The coating is available in several colors.

Circle T-54 on Reader-Service Card

Conductivity Control

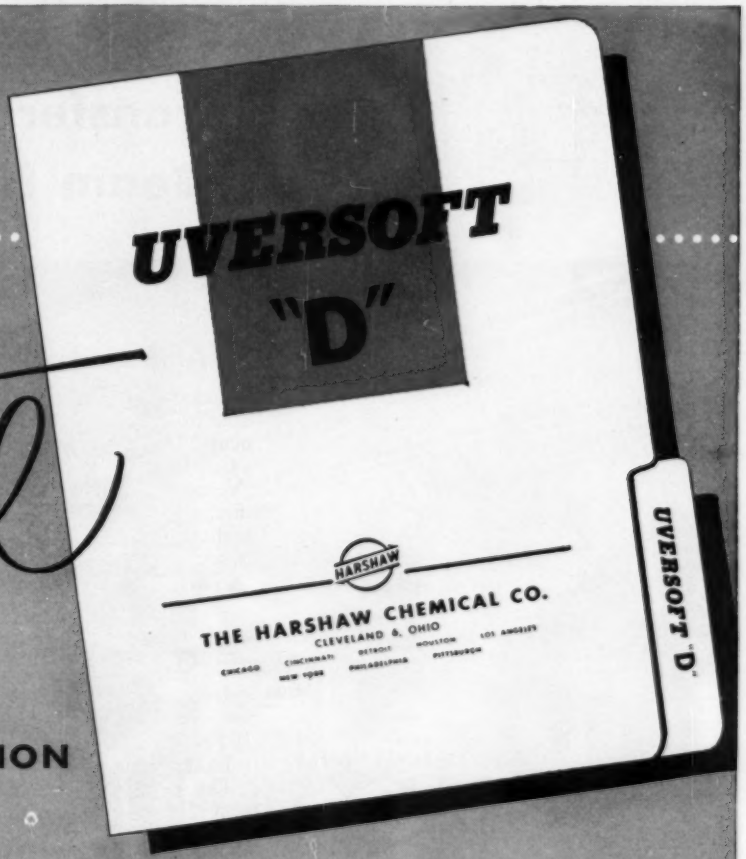
An instrument that measures conductivity of solutions has been announced by Fielden Instrument Div., Robertshaw-Fulton Controls Co., 2920 N. Fourth St., Philadelphia 33, Pa. Two standard ranges of conductivity are offered: 0 to 30 micromhos/cm³ and 20 to 200 micromhos/cm³. Accuracy is ± 0.5% of full scale; temperature compensation is automatic in the 20 to 200° F. range. Error is limited to ± 2%, or ± 5% of the full scale.

Circle T-55 on Reader-Service Card

Electric-Motor Clutch

A low-priced automatic clutch for $\frac{1}{6}$-, $\frac{1}{4}$-, and $\frac{1}{3}$-hp. electric motors has been introduced by Mercury Clutch Div., Automatic Steel Products, Inc., Canton, Ohio. The clutches are for air-conditioning systems, furnace blowers, and other uses.

Circle T-56 on Reader-Service Card



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FOR THIS HELPFUL INFORMATION

Imparts Soft Hand With Little Reduction In Moisture Absorbency

UVERSOFT "D" is a cationic surface active agent which produces a full, soft hand with little, if any, reduction in moisture absorbency of the TREATED material. It can be exhausted from a long bath, and has an excellent retention in an aqueous system. UVERSOFT "D" provides a maximum economy in application and use.

UVERSOFT "D" is an outstanding anti-static agent. It should be considered for situations where the accompanying softening action is not objectionable.

Send for folder containing complete technical information.

TECHNICAL BULLETIN ON *UVERSOFT* "D"

Send me technical information on Harshaw Uversoft "D"

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Company Name_____

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The Harshaw Chemical Company

1945 EAST 97th ST., CLEVELAND 6. OHIO

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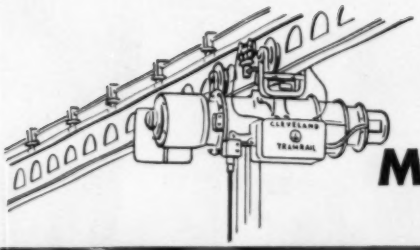
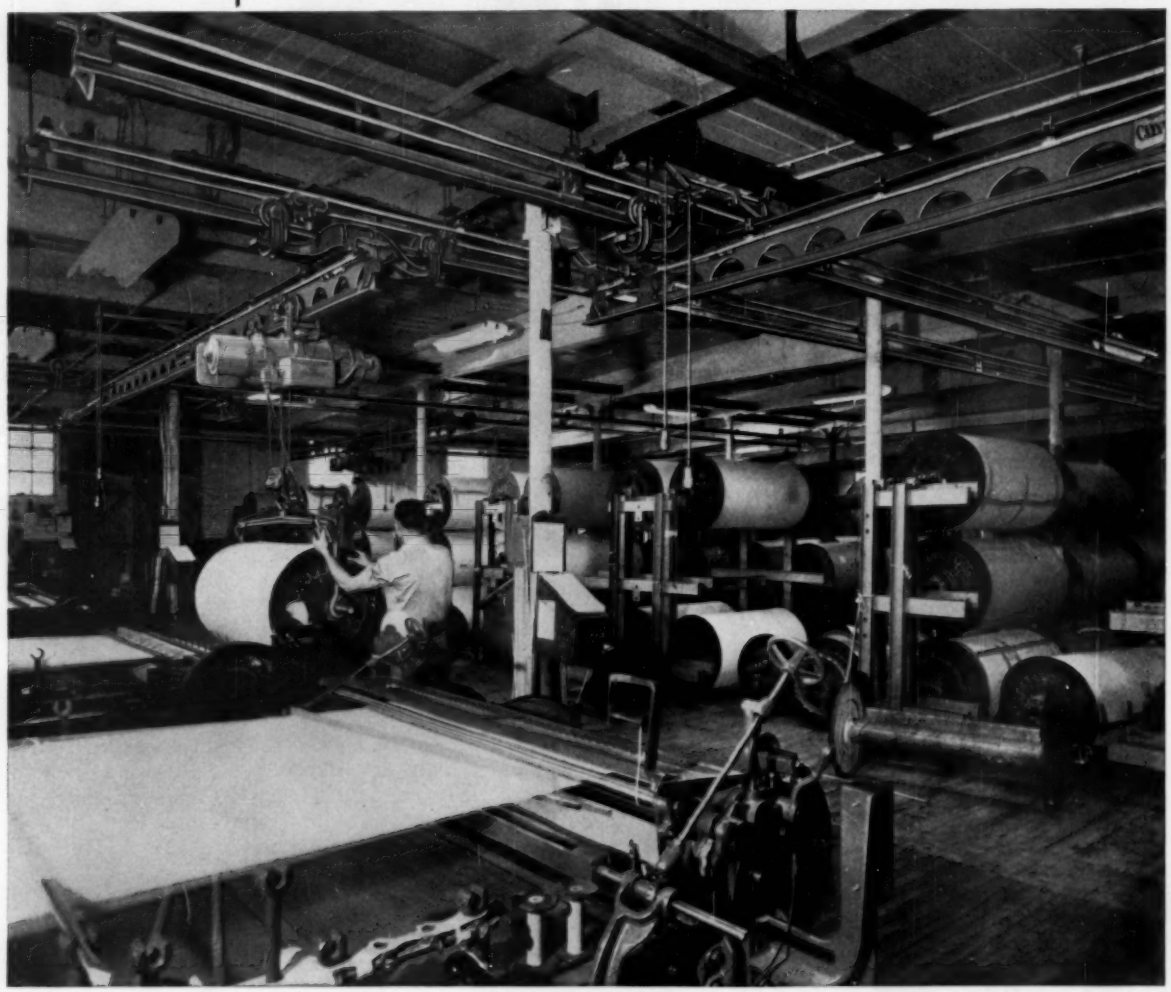


Transfer Cranes Make Beam Handling Easy



IN THIS photograph you see a 28 inch beam weighing 1300 lbs. being lifted off a slasher with a Cleveland Tramrail handpropelled crane equipped with an electric hoist. In a matter of seconds the beam is placed into a rack in the Loom Beam Storage.

The Tramrail enables one man to take care of this job easily and safely. It makes possible the use of storage racks because no physical work is required of the operator to lift the beams in and out of them. The racks permit storing more beams in the storage area and provide immediate accessibility to any beam.

Three cranes serve five slashers in this mill. They operate on individual and adjacent runways. They may be interlocked with connecting spur tracks and thus admit a hoist carrier to move onto any crane.

This is one of dozens of types of Cleveland Tramrail applications used widely by the Textile Industry.

CLEVELAND TRAMRAIL

Overhead Materials Handling Equipment

CLEVELAND TRAMRAIL DIVISION • THE CLEVELAND CRANE & ENGINEERING CO. • 8482 E. 287 ST. • WICKLIFFE, OHIO

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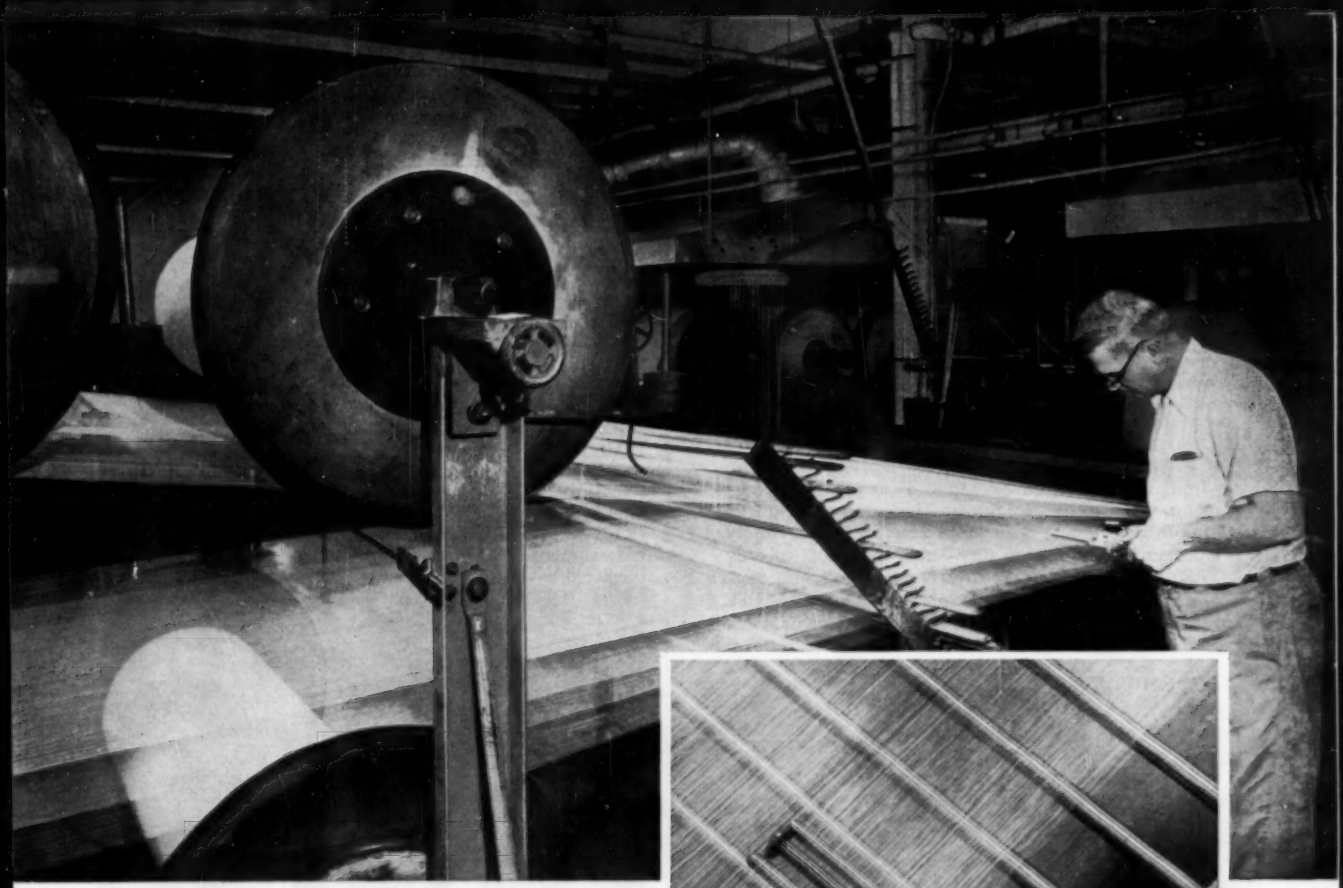


NEW KIDDE SLASHER TENSOMETER ends uneven yarn sheet tension in cotton system slashing

The new KIDDE Slasher Tensometer prevents a principal cause of streaky fabric in weaving mills that slash their yarn on the cotton system. No matter how many creel beams you use to make up your warp, you can now be sure that the tension in all yarn sheets is the same. With the KIDDE Slasher Tensometer it is easy to compare the tensions in the yarn sheets making up the sley and adjust the beam let-offs to even out any differences. It eliminates the all too fallible human element in estimating tensions from different beams in the same set.

Developed in cooperation with the Textile Research Laboratory of American Viscose Corporation, the KIDDE Slasher Tensometer will provide quality insurance in any slasher room. For prices and complete information, write today to: Dept. STA2

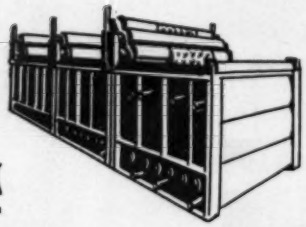
TRICOT AND RASCHEL MACHINES • TRICOT WARPERS • HORIZONTAL WARPERS
BEAMERS • CREELS • SLASHERS • WINDER-REDRAWS • TENSOMETERS

Kidde MANUFACTURING CO., INC. — 42 FARRAND STREET — BLOOMFIELD, NEW JERSEY

SOUTHERN OFFICE — 267 W. MAIN ST., GASTONIA, N. C.

The word KIDDE is the trademar' of Walter Kidde & Company, Inc., and its affiliated companies.

8,000 Gallon Boil-Off Tank



Cleaned for LESS than $8.00!

The two large boil-off tanks at one mill formerly required 130 man-hours each for thorough cleaning —and the cost often exceeded $130 per unit. Now, using an Oakite Hot-Spray Unit and specialized Oakite detergents, *both* tanks can be immaculately cleaned in less than a day—at a total cost of only $7.20 per unit! Your nearby Oakite Man has complete details. Call him today—or send for FREE illustrated Textile Mill Cleaning Manual. Oakite Products, Inc., 42 Rector St., New York 6, N. Y.

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OAKITE
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Export Division Cable Address: Oakite

Technical Service Representatives in Principal Cities of U. S. and Canada

How Metallizing saves money in textile mills

cuts machine repair costs 80%—
cuts equipment "down-time"—
permits reduced spare parts stocks

Practically any worn machine part—repaired for only 15 or 20% of replacement cost—in minutes and hours, instead of days or weeks.

Worn Equipment and Parts

Drive shaft journals	Top rolls, necks and centers
Roll journals and surfaces	Slasher roll surfaces and journals
Spindle tops and whorls	Blanket roll journals
Calender rolls and journals	Sand roll surfaces and journals

The list of metallizing users in the textile field reads like a Blue Book of the industry. Here are just a few:

Cannon Mills	Deering-Milliken	Bib Mfg. Co.
Dan River Mills	Greenwood Mills	Bruck Mills (Canada)

Write today for further information or a call by a full-time, company-trained Metco field engineer in your territory.

METCO

Metallizing Engineering Co., Inc.
1159 Prospect Ave., Westbury, L. I., New York · cable: METCO
In Great Britain: Telephone: EDGEWOOD 4-1300
METALLIZING EQUIPMENT COMPANY, LTD.—Chobham near Woking, England

NEWS ABOUT SUPPLIERS

ACME STEEL CO., DEXION DIV., Chicago, Ill.—Has named Lewis R. Darlin as central regional manager. . . . **ALLIS-CHALMERS MFG. CO.**, Milwaukee, Wis.—Has appointed J. S. Morgan as director of domestic sales for the Industries Group. In the Pittsburgh district office of the Industries Group, John H. Baisley has been appointed manager of metal-industry sales; E. E. Ellis, manager, general industrial sales; and L. H. Walke, manager, utility sales.

BARBER-COLMAN CO., WHEELCO INSTRUMENTS DIV., Rockford, Ill.—Has announced the expansion of sales and service facilities in the Columbus, Cleveland, Chicago, Grand Rapids, Los Angeles, Toronto, and Montreal areas. . . . **BECCO CHEMICAL DIV., FOOD MACHINERY & CHEMICAL CORP.**, Buffalo, N. Y.—Has promoted Fred R. Sheldon to research-laboratory manager. Dr. Samuel S. Naistat has been promoted to manager of inorganic and physical-chemical research and development, and Joseph Bomstein has been promoted to assistant manager.

RICHARD DESTEFANO (left) has been named by Minneapolis-Honeywell Regulator Co., Freeport, Ill., to direct nationwide sales of the company's proximity switches. PAUL S. HORTON (center) has been appointed sales engineer for H. F. Livermore Corp., Boston, Mass., and will cover the textile mills in North and South Carolina and Tennessee. EUGENE M. KENNEDY (right) has been named export sales manager for Whitin Machine Works, Whitinsville, Mass.

CARRIER CORP., Syracuse, N. Y.—Has acquired Elliott Co., Jeanette, Pa. . . . **CELANESE CORP. OF AMERICA**, New York, N. Y.—Has announced the appointment of Royal Mfg. Co., Perth Amboy, N. J., as distributor of Type F acetate staple fiber. . . . **CHEMSTRAND CORP.**, Decatur, Ala.—Has announced that it has reached an agreement with Societa Edison of Milan, Italy, for manufacturing acrylic fibers in Italy by a newly formed subsidiary of Societa Edison. Chemstrand will be a minority shareholder. The company plans to expand production capacity by 50% at its Acrilan plant, Decatur, Ala. The new facilities are scheduled for completion early next year. . . . **COBBLE BROS. MACHINERY CO., INC.**, Chattanooga, Tenn.—Has acquired the assets of the punchwork machine division of Van Dyke Textigraph Corp.

CROWN ZELLERBACH CORP., SAN LEANDRO CONVERTING DIV., San Francisco, Calif.—Will be consolidated with the company's new manufacturing and converting facilities at Antioch. . . . **DELHI-TAYLOR OIL CORP., CHEMICAL DIV.**, Corpus Christi, Tex.—Has announced that the division's new petrochemicals plant will go on stream July 1. . . . **DENMAN TEXTILE RUBBER CO.**, Warren, Ohio—Has built a new plant at Cuyahoga Falls, Ohio, which will produce loom parts. The company also announced that Karl H. Inderforth Co., Charlotte, N. C., has been named exclusive representative in North Carolina, South Carolina, and Virginia. . . . **DOBECKUM CO., INDUSTRIAL DIV.**, Cleveland, Ohio—Has appointed P. Gordon Lea to the Charlotte, N. C., office. He will specialize in the sale of Lurex metallic yarns.

DOW CORNING CORP., Midland, Mich.—Has announced that American Cyanamid Co., Arkansas Chemical Co., Refined Products Co., Soluol Chemical Co., and Warwick Chemical Co. have been licensed to manufacture Syl-mer silicone finishes. . . .

CONTINUOUS QUALITY CONTROL IN MANUFACTURING

The BIG news in fibre control!

The USTER Spectrograph

One spinning mill owner expressed a typically American idea:

"Good yarn? Man, I want to make the very **best**!"

In spite of ambitious control methods and maintenance programs, most mills today can produce only average yarn.

Uster's Spectrograph now makes it possible for every mill to produce the **best** yarn . . . through rigorous fibre control . . . through greatly improved efficiency in maintenance.

Spectrograph misses **no** variation—gives a complete picture of where **all** variations are occurring. And interpretation is so simple overseers and fixers see trouble spots immediately.

Now Uster's Spectrograph gives complete analysis:

1. Correlates yarn irregularities and fabric appearance.
2. Pinpoints the cause for specific yarn irregularities.
3. Guides the mill to improved fibre control.
4. Records sample "history" from raw stock to spun yarn.

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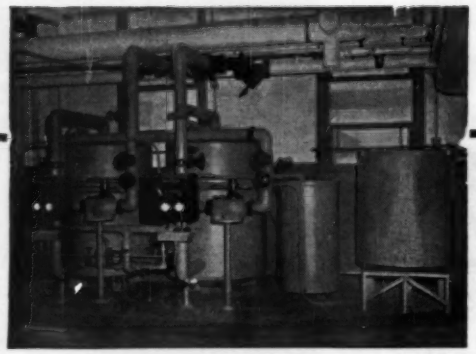


INVERSAND WATER SOFTENER PLANT

Producing

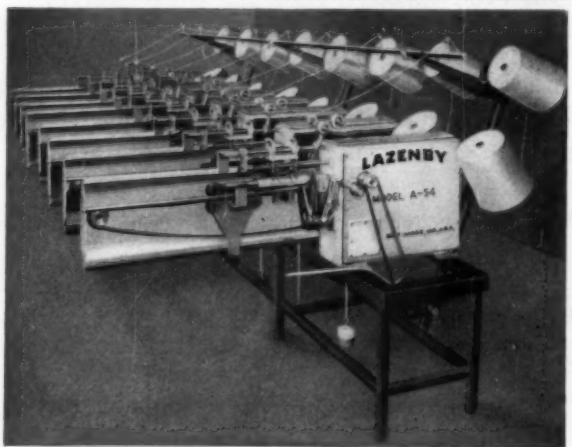
CLEAR-IRON FREE 100% SOFT WATER

Often For As Little As 1¢ per 1000 Gallons

Troubled with harshness, poor finish, uneven shades, redyes, seconds, and other product difficulties—?? The secret of uniformity may lie in your water supply. May we check it for you?

HUNGERFORD & TERRY, INC.

CLAYTON 9 NEW JERSEY



WIND COPS OF MAXIMUM DIAMETER AND LENGTH

New Automatic Winder by Lazenby, Model A-54 winds cops of maximum yardage from 8" to 22" long and 1 1/8" to 2" in diameter.

- labor saving
- dial control
- quick adjusting
- quick changeover
- precision manufacture
- Timken bearing equipped

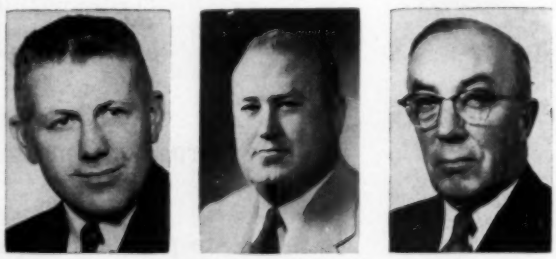
SEND FOR DESCRIPTIVE FOLDER

The F. A. LAZENBY Company

3106 ELM AVENUE BALTIMORE 11, MD.

NEWS ABOUT SUPPLIERS Continued

E. I. DU PONT DE NEMOURS & CO., TEXTILE FIBERS DEPT., Wilmington, Del.—Has appointed Hugh S. Jones, Jr., technical representative in Europe. . . . **EMERY INDUSTRIES, INC.**, Cincinnati, Ohio—Has appointed Joseph P. Clancy eastern district sales manager of the Organic Chemical Sales Dept. Joseph E. Quinty has been appointed to the Chicago office, William C. Sowers to the New York office, and Arthur R. McDermott as New England representative. . . . **FAIRBANKS, MORSE & CO.**, Chicago, Ill.—Has announced the appointment of R .K. Annis to the company's engineering division as development engineer. . . . **FOOD MACHINERY & CHEMICALS CORP., ORGANIC CHEMICALS DIV.**, New York, N. Y.—Has appointed Richard M. McFarland product manager of plastics. Dr. Desmond M. C. Reilly has been named manager of technical information. . . . **GENERAL ANILINE & FILM CORP.**, New York, N. Y.—Has appointed Warren M. Dewing New England branch manager of dyestuff sales. A. L. Sanchirico has been appointed sales representative, Pigment Div., and will handle sales of pigments in the Midwest. . . . **GENERAL ELECTRIC CO.**, Schenectady, N. Y.—Has named Cross Sales & Engineering Co., Greensboro, N. C., as an authorized distributor of industrial equipment. Georgia-Tennessee Supply Co., Gainesville, Ga., has also been named a distributor.



FRED C. BUTLER (left) has been promoted to director of manufacturing, Pneumafil Corp., Charlotte, N. C. W. ADRIAN KING (center) has been appointed general sales manager of the Industrial Chemicals Div., Olin Mathieson Chemical Corp., New York, N. Y. CLARENCE H. MINGLE (right) will become director of marketing for Gates Rubber Co., Denver, Colo.

HAGAN CHEMICALS & CONTROLS, INC., Pittsburgh, Pa.—Will move its offices and research center from downtown Pittsburgh to a 27-acre site on the Penn-Lincoln Parkway West early in the summer of 1958. . . . **HEYDEN NEWPORT CHEMICAL CORP.**, New York, N. Y.—Has announced that the research organization of the Newport Industries Div. and Heyden's Garfield, N. J., research organization will be integrated into a single research department under the direction of Dr. Herman Sokol. The company also announced that it will build a new plant at Fords, N. J., to produce salicylaldehyde. . . . **INDUSTRIAL PRODUCTS CO.**, Atlanta, Ga.—Has announced that plans have been completed for a plant to be located in Decatur, Ga. J. B. Cagle is now associated with the company as chemical engineer and director of quality control and is in charge of technical sales.

LAMSON CORP., Syracuse, N. Y.—Has appointed Gifford Littredge as managed of the commercial div. . . . **LEWIS-SHEPARD PRODUCTS, INC.**, Watertown, Mass.—Has appointed Texas Materials Handling Co., Houston, Tex., as exclusive sales and service representative in the Houston area. . . . **L. O. F. GLASS FIBERS CO.**, Toledo, Ohio—Has appointed James W. Hunter and Walton H. Stahl as field representatives.

JERSEY STATE CHEMICAL CO., Haledon, N. J.—Has appointed Albert R. Jenny to the position of general sales manager. . . . **KOPPERS CO., INC.**, Pittsburgh, Pa.—Has appointed L. R. Hunter sales manager for the Chemical Div. . . . **McKIERNAN-TERRY CORP.**, Harrison, N. J.—Has named Frank W. Hamilton to the board of directors. . . . **MERTECFELT CORP.**, Englewood, N. J.—has made arrangements with the successors to Kleinewefers, Krefeld, Germany, to supply tailor-made spare and replacements parts for all types of textile-

Adamstop

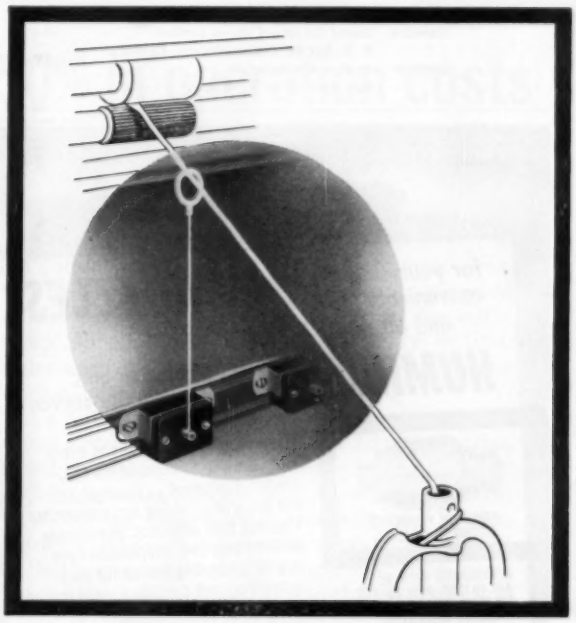
***instantly* stops frame when these defects occur . . .**

- SLIVER RUNOUTS
- LAPPED ROLLS
- CHOKES (sliver)
- PLUGGED FLYERS
- SINGLINGS
- RUNOVERS
- CLEARER WASTE
- BAD SLIVER SPLICES

. . . MAKING IT POSSIBLE FOR AN OPERATOR TO RUN 8 MODERN FRAMES. 4 OPERATORS TAKE CARE OF ALL THE DUTIES ON THIS NEW 32 FRAME JOB:

Frames per operator	8
Size of frame	12 x 7
Hank roving	1.15
Spindles per frame	96
RPM of front roll	130
Percent efficiency	89
Size can in creel	15″ x 42″

It's a good bet that with ADAMSTOP YOUR operators can run 25% to 100% more spindles.



This ADAMSTOP Nylon Eyelet monitors all roving production from sliver to spindle! If the roving slackens or breaks due to any roving failure, the Adamstop eyelet falls to either side making contact with an electrical circuit which stops the frame. This eliminates faulty production, excessive waste, damage to the roving frame and frees the roving tender of close supervision of each frame.

ADAMS, INC., 209 East Stone Ave., Greenville, S. C. — Phone 38381

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IMPROVED

NEPOTOMETER

Now you can avoid costly guess-work on the nepping quality of cotton. This high precision instrument simulates the manufacturing phases and measures the fiber's nepping potential.

Originally developed by N. C. State College School of Textiles under contract with U. S. Dept. of Agriculture. *Now* redesigned and re-engineered to meet rigid standardization specifications.

Immediate delivery. $1400 F. O. B., Durham, N. C. Literature upon request.

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DIVISION OF SPERRY RAND CORPORATION

DURHAM, NORTH CAROLINA

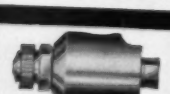
CANADA: Sperry Gyroscope Ottawa Limited
P. O. Box 90, Ottawa, Ontario, Canada

EXPORT: 13 East 40th Street,
New York 16, N. Y., U. S. A.

for your convenience **SPRAY NOZZLES**

and all related accessories for

HUMIDIFYING *from a single, dependable source*



PRECISION PNEUMATIC ATOMIZING NOZZLES

ACCESSORIES SUCH AS AIR FILTERS, HUMIDISTATS, SOLENOID VALVES, PRESSURE REGULATORS

COMPACT HUMIDIFYING UNITS

For industrial installations of every size Spraying Systems offers all needed equipment . . . everything but the piping, wiring and compressor. Provides high efficiency, dependable system; only two components have moving parts. Engineered for easy installation and simplified maintenance.

WRITE FOR Bulletin 82 . . . spray nozzles, assemblies and parts for manual or automatic humidifying systems.

ALSO SUPPLIED . . . spray nozzles for evaporative condensers, air washers, cooling towers, spray ponds and roof cooling systems.

SPRAYING SYSTEMS CO.

3233 RANDOLPH STREET • BELLWOOD, ILLINOIS

ADVANCED SPRAY NOZZLE DESIGN FOR NEW DIMENSIONS IN CONTROL AND PERFORMANCE

NEWS ABOUT SUPPLIERS Continued

finishing equipment made abroad. . . . **MILPRINT, INC.**, Milwaukee, Wis.—Has appointed Morgan J. Bearden to the sales staff, representing Milprint, Inc., in the Carolinas. . . . **NEPTUNE METER CO.**, New York, N. Y.—Has acquired a 50% interest in Hot Spot Detector, Inc., Des Moines, Iowa. . . . **NOPCO CHEMICAL CO.**, Richmond, Calif.—Has opened a Los Angeles sales office for its industrial chemical division and the Metasap Chemical Co. In the future it will market its product under the trade name of Nopcocell.

OLIN MATHIESON CHEMICAL CORP., Baltimore, Md.—Has appointed John F. Synan and Walter W. Northgraves to the market development department of the Industrial Chemicals Div., where they will specialize in the textile, pulp and paper, and leather industries. The Industrial Chemicals Div. will market all chlorine output of the new chlorine-caustic soda plant built by Kaiser Aluminum & Chemical Corp., Gramercy, La.

JOSEPH T. RYERSON & SON, INC., Chicago, Ill.—Has appointed John Cattanach, Jr., manager of sales of tubular products and cold-finished steel bars, Buffalo. H. Daniel Robb has been promoted to national products manager, alloy steels. His headquarters are in Chicago.

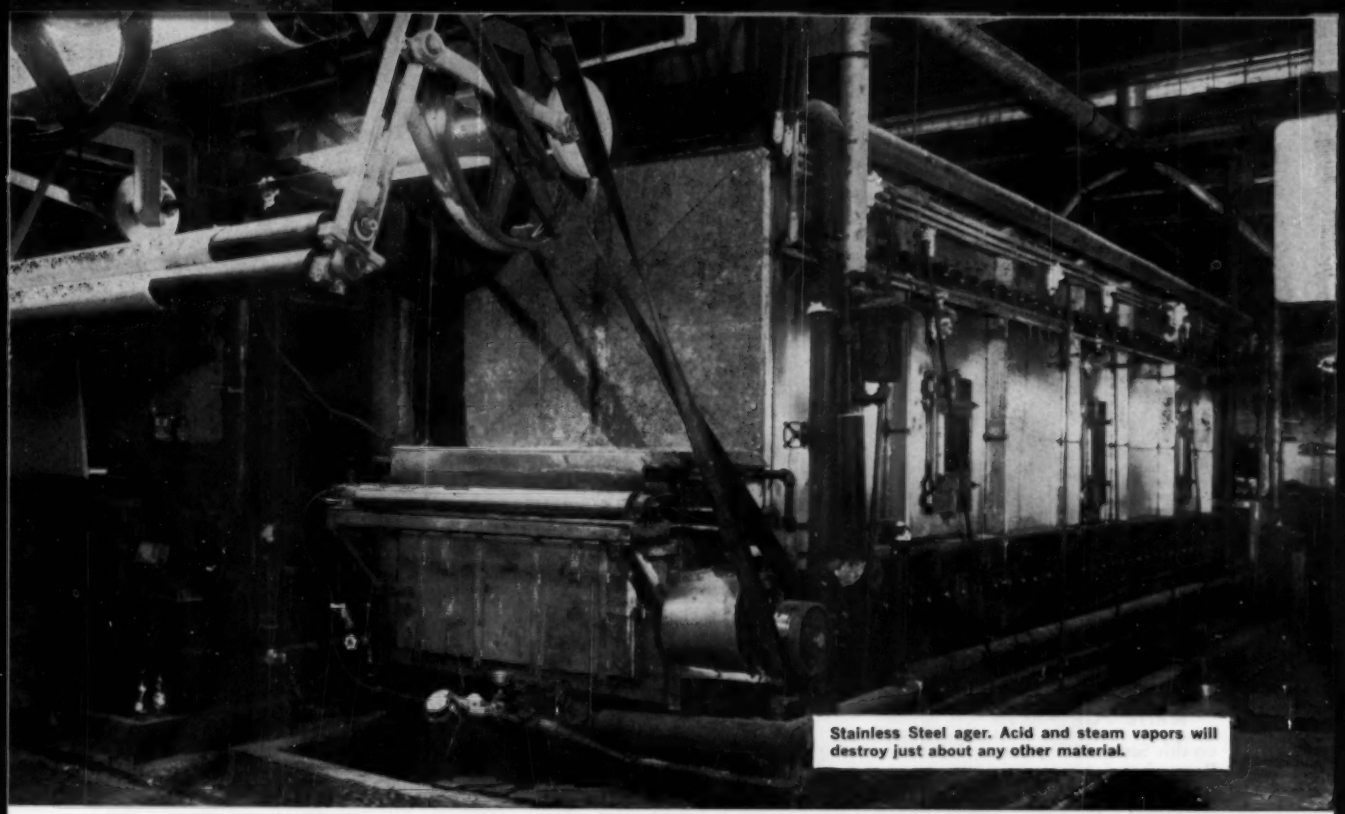
CHARLES K. PFRANGLE (left) has been appointed representative in Minnesota and northern Wisconsin for Stowe-Woodward, Inc., Neenah, Wis. DAVID E. HENDERSON (center) has been elected a vice president of Roberts Co., Sanford, N. C. EDWARD D. CARMAN (right) has joined the instrument sales staff of Universal Winding Co., Providence, R. I.

A. O. SMITH CORP., Milwaukee, Wis.—Has named A. C. Persson north central district sales manager of pressure vessels and heat exchangers. . . . **STEIN HALL & CO.**, New York, N. Y.—Has appointed Frank Supeno as general sales representative, Charlotte, N. C.

SUN CHEMICAL CORP., WARWICK CHEMICAL DIV., Long Island City, N. Y.—Has appointed T. E. McIlwain Suntone service manager and sales representative. . . . **TEXTILE LEATHER DIV., GENERAL TIRE & RUBBER CO.**, Toledo, O.—Has moved the Forrest Process operations from the Bronx, N. Y., to Toledo. . . . **TEXTILE MACHINE WORKS**, Reading, Pa.—Has promoted Charles R. Moyer to the circular-knitting section of the braiding-machine division as assistant to the manager.

UNION CARBIDE & CARBON CORP., New York, N. Y.—Has shortened its name to Union Carbide Corp. Carbide & Carbon Chemical Co. has become Union Carbide Chemicals Co.; Linde Air Products Co. is now Linde Co.; and Carbide & Carbon Realty Co. will be known as Union Carbide Realty Co. The company also announced that A. Lyndon Foscoe, Birny Mason, Jr., and Edwin B. Suydam have been elected vice presidents of Union Carbide and Herman K. Intemann has been appointed president of Electro Metallurgical Co. . . . **CARBIDE & CARBON CHEMICALS CO., DIV. OF UNION CARBIDE CORP.**, New York, N. Y.—Has appointed D. M. Nielsen assistant district manager of the New York district sales office and R. H. Rehm assistant district manager of the Newark district sales office.

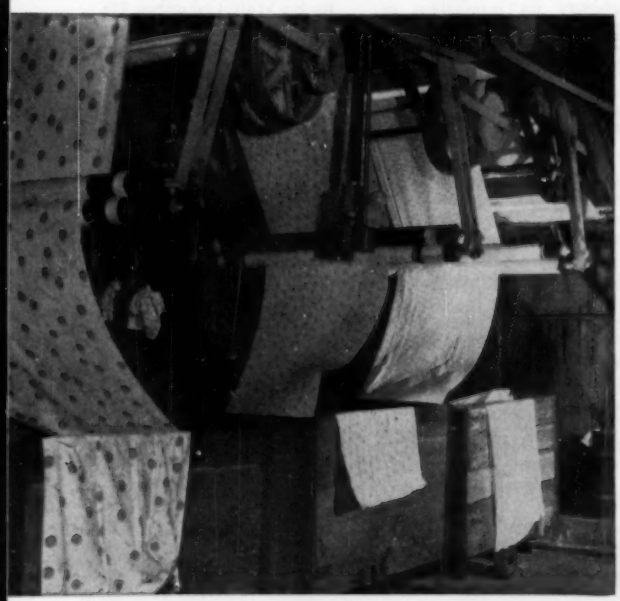
U. S. RUBBER CO., NAUGATUCK CHEMICAL DIV., Baton Rouge, La.—Has announced that a new chemical plant will be built in the Scotts Bluff area of Baton Rouge and will be used to make Kralastic plastic materials. . . . **U. S. STEEL CORP.**, New York, N. Y.—Has appointed William S. Morrison as president of U. S. Export Co. . . . **WYANDOTTE CHEMICAL CORP., MICHIGAN ALKALI DIV.**, Wyandotte, Mich.—Has appointed James E. Domke sales representative operating out of Wyandotte.



Stainless Steel ager. Acid and steam vapors will destroy just about any other material.

Stainless Steel ager saves 50% in operation costs

at Rock Hill Printing & Finishing Company, Rock Hill, S. C.



Rock Hill operates what is probably the largest dyeing and finishing plant in the world. They process about 500 million yards of cotton and synthetic cloth every year.

There used to be an ager in the plant made from wood and plastic. The heat and moisture warped the walls, and the plastic expanded and cracked. Finally, in 1954, a fire damaged the machine. It was replaced with one made completely from Stainless Steel.

What a difference! After three years, the Stainless is in perfect condition, and, making an admitted guess, Rock Hill people expect the machine to last for 15 or 20 years. Colors come out sharper in the new Stainless Steel ager, but the big improvement has been in operation costs. Easy-to-fabricate Stainless Steel permitted "tight" design that prevented the escape of valuable steam, acids and other chemicals. All in all, counting material and labor savings, and reduced down time, operation costs in the department have plummeted *50%*.

In modern textile mills, very few investments pay off as well as Stainless Steel equipment. And the finest equipment is made from *USS* Stainless Steel.

◀ Delivery end of the new ager. Colors are noticeably sharper.

UNITED STATES STEEL CORPORATION, PITTSBURGH • AMERICAN STEEL & WIRE DIVISION, CLEVELAND
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO • NATIONAL TUBE DIVISION, PITTSBURGH • TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA.
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USS STAINLESS STEEL

USS

SHEETS • STRIP • PLATES • BARS • BILLETS • PIPE • TUBES • WIRE • SPECIAL SECTIONS

7-1053

UNITED STATES STEEL

Johnson Joint with SYPHON ELBOW
3000 Series
ASSEMBLY PLATE — Holds internal parts in position when head is removed.
SELF-SUPPORTING — Needs no external supports of any kind.
SYPHON ELBOW — Permits use of straight pipe for syphon. Can be inserted or withdrawn right through the joint.

WRITE FOR FACTS

on this Series 3000 Johnson Joint and the syphon elbow. Remember Johnson Joints have written an unmatched service record . . . are first choice among mill men and machinery makers alike . . . and can fit all operating needs.

The Johnson Corporation

814 Wood St., Three Rivers, Mich.

CUTTING PADS

Made of tough, "self-healing" TYGON plastic, COLONIAL Cutting Pads —

1. **Reduce die wear and breakage,**
2. **Lessen rejects from double cutting due to "bounce back",**
3. **Increase production through quiet, less fatiguing operation.**

Long wearing, dustless, and usable on both sides, COLONIAL Cutting Pads are widely used in machine, or hand cutting of rubber, leather, plastics, cork, candy, paper, fibre, felt cloth, foils, or light gauge metals.

Colors are black and tan. Standard durometers are 87 to 97, others on special order. 8 standard sizes range from 20"x20" to 40"x40" in area, and from ¼" to 1" in thickness.

Write, today, for full information and prices! 203C-1

COLONIAL RUBBER CO.
RAVENNA, OHIO

NEWS ABOUT MILLS

COTTON MILLS

Avondale Mills' Sycamore plant, Sycamore, Ala., has purchased 10 Bahnson cross-jet cleaners. The Eva Jane plant, Sylacauga, Ala., has purchased 15 of the cleaners.

Bibb Mfg. Co., Columbus, Ga., has bought four Saco-Lowell Model 57 high-production combers. The combers will be equipped with four-over five draw boxes and automatic top and bottom clearers, a fully automatic lubrication system, and 15x42-in. coilers. The company has also purchased three Saco-Lowell twisters and one ring Spinster for its Ospray Plant, Porterdale, Ga. The twisters, will be equipped with 136 spindles each and are built on a 7-in. gauge with a 5½-in. ring diameter.

Burlington Industries, Inc., Modena Plant, Gastonia, N. C., has purchased new Saco-Lowell machinery for installation in opening and card rooms. Opening equipment includes one No. 12 lattice opener, a No. 16 opener, and two No. 6 automatic air filters. Three Model 56 high-production combers have been ordered and will be equipped with 14x36-in. coilers, automatic lubrication, and four-over-five draw boxes with automatic self-cleaning clearers.

Burlington Shirting Fabrics Co., New York, N. Y., has been set up as a separate member of Burlington Mills. It was formerly known as the Shirting Fabrics Div., Burlington Mills.

Hillsboro Cotton Mills, Hillsboro, Tex., has appointed Joshua L. Baily & Co., New York, N. Y., as selling agent.

Indian Head Mills, Inc., New York, N. Y., has announced the formation of a new subsidiary company to operate the cotton mill located at Ponce, Puerto Rico, under an agreement with the Puerto Rico Industrial Development Co. The new company, Indian Head Puerto Rico, will buy inventories in the mill from Textron Puerto Rico, which formerly operated the plant.

Lincoln Mills of Alabama, Huntsville, Ala., has sold all its property to Huntsville Industrial Associates, Huntsville, Ala. The property includes five manufacturing buildings, with approximately 800,000 sq. ft. of floor space, and some 27 acres of land.

Jordan Mills, Columbus, Ga., has completed construction of a new weaving department.

Manetta Mills, Lando, S. C., has begun construction of a three-story, 18,000-sq.-ft. structure to be used for storage. The cost will be $45,000.

Quaker Meadows Mills, Inc., Hickory, N. C., has installed four Dodenhoff Model 360AC fiber-meter automatic-weighing feeders, a steel horizontal conveyor, a steel inclined conveyer opener with automatic mixing chamber, an automatic reversing apron, a fiber-meter remote-control panel, and two 38½-in. F-2 Kitson feeder hoppers with Sargent combs.

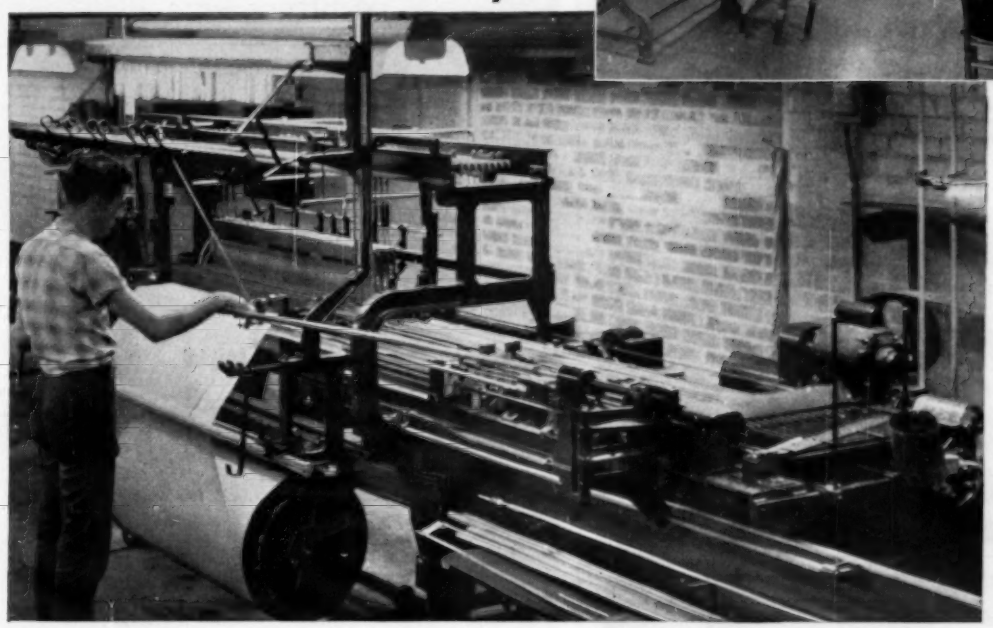
WOOLEN AND WORSTED MILLS

Bachman-Uxbridge Worsted Corp., Uxbridge, Mass., has sold its Granite Mill in Pascoag, R. I., to Commerce & Industry, Inc., Boston, Mass.

Hartford Woolen Co., Hartford, Vt., has terminated operations.

National Haircloth Co., Philadelphia, Pa., will move all its interlining looms to its new Shelby, N. C., plant by late

IF YOU ARE
ENTERING
YOUR **WARPS**
LIKE THIS



WE SUGGEST YOU LOOK INTO THE

BARBER-COLMAN
WARP DRAWING MACHINE

With this machine, the time-eating task of drawing-in is speeded up tremendously. A power-driven needle, running at 127 to 230 strokes per minute (depending on the number of weaving elements to be entered), draws each thread in succession through the correct selection of drop wire, heddle, and reed dent. This correct selection is made accurately *and automatically* for each pick by a sequence of mechanical actions controlled by a pattern strip punched in accordance with the designer's draft. Very substantial reductions of drawing-in costs are possible, particularly on patterned goods such as stripes, plaids, and fancy weaves. This *modern method* of replacing warps has enabled many mills, both large and small, to meet the ever-increasing demands for a greater variety of patterns. *Your Barber-Colman representative is qualified to advise you on possibilities in your mill.*

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • WARP DRAWING MACHINES

BARBER-COLMAN COMPANY

ROCKFORD • ILLINOIS • U. S. A.

FRAMINGHAM, MASS., U. S. A. GREENVILLE, S. C., U.S.A. MANCHESTER, ENGLAND MUNICH, GERMANY

INDIA	MEXICO	BRAZIL	JAPAN	PAKISTAN	PAKISTAN
Batliboi & Company Forbes Street, Fort Bombay, India	J. Rabasa Isabel la Catolica 45-913 Apartado 7348 Mexico D.F., Mexico	Industria e Comercio de Maquinas S. A. Avenida Rio Branco No. 50, Rooms 1201/3 P. O. Box No. 63 Rio de Janeiro, Brazil	Do-Yei Shoji Kabushiki Kaisha Atlas Building (7th Floor) 11, Bingo-machi, 3-chome, Higashi-ku, Osaka, Japan	Associated Agencies (M'cr.) Ltd. Piccadilly House 11 Piccadilly Manchester 1, England	Associated Agencies (M'cr.) Ltd. 27 Kothari Building Napier Road Karachi 2, Pakistan

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Our specialty is making Dary ring travelers—an item well and favorably known to the textile trade for more than half a century. Though times change, we at Dary hold to one course without deviation. We continue to serve, by pursuing our specialty.

When you need ring travelers, call on our experience to aid your choice. Consult your friendly Dary representative!

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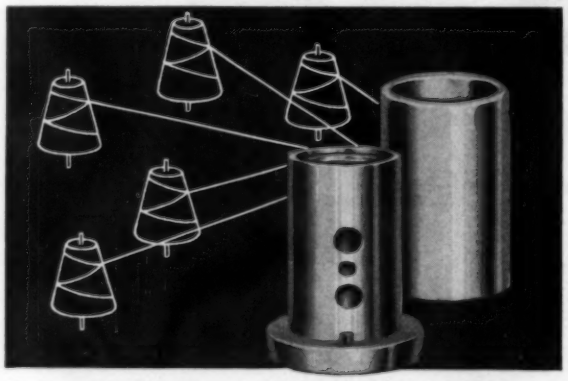


Johnson Bronze offers quick delivery on a full line of high quality Textile Replacement Bearings

Johnson Bronze can deliver a large variety of textile machinery replacement bearings from stock. These special bearings are made to the same specifications as the originals which they replace, and will give the same satisfactory service.

The fast Johnson service on bearings for all types of textile machinery, and the high quality of their products make Johnson Bronze your best source for replacement bearings. Write for free literature, requesting Folder JBL-9. Johnson Bronze, 364 S. Mill St., New Castle, Pa.

JOHNSON Bearings

Johnson Textile Bearings

1957. The haircloth looms will continue to operate in Philadelphia.

Waucantuck Mills, Inc., Uxbridge, Mass., has terminated all employment.

SYNTHETICS MILLS

Chemspun Yarns Ltd., Brooklyn, N. Y., is transferring its novelty-yarn-twisting operations to Mooresville, N. C. The company will continue operating a winding section in Brooklyn.

Courtaulds Ltd. and British Celanese Ltd., London, England, with combined assets the equivalent of $450,000,000, have announced plans to merge and improve their export market.

KNITTING MILLS

Allen Knitting Mills, Inc., New York, N. Y., has moved to new sales and executive offices at 1412 Broadway.

Burlington Industries, Inc., New York, N. Y., will build a hosiery-manufacturing plant near Capetown, South Africa. The plant, scheduled for completion in January, 1958, will manufacture women's full-fashioned and seamless hosiery in both conventional and stretch styles.

Greensboro Knitting Mills, Inc., Greensboro, Ga., is a newly formed corporation that will manufacture various knitted items.

Hickory Grove Mfg. Co., Hickory Grove, S. C., is a new company replacing Bereen Knitwear Co., Inc., which moved its quarters to Clover, S. C., last year.

Overbrook Hosiery Co., Maiden, N. C., has changed its name to Maiden Hosiery Mills, Inc., Div. of Chester H. Roth Co., Inc., New York, N. Y.

Parsons & Baker Co., Phoenixville, Pa., has begun production of infants' and children's garments at its Casa Grande, Ariz., plant.

Waynesboro Knitting Co., Waynesboro, Pa., has relinquished controlling stock interest to American Pad & Textile Co., Greenfield, Ohio. Operation in Waynesboro will continue without change in personnel or management policies.

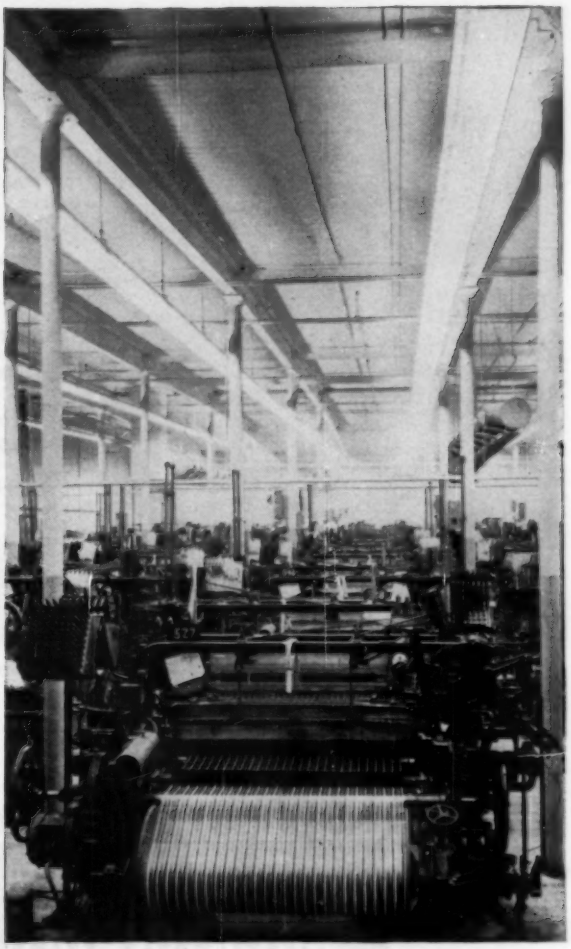
DYEING AND FINISHING PLANTS

Dodgeville Finishing Co., Blacksburg, S. C., will open a new plant in June after installation of new equipment. Containing about 60,000 sq ft. of manufacturing space plus about 25,000 sq. ft. of warehousing space, the plant will handle finishing of nylon, rayon, and Dacron marquisette for curtains under its Endurable label.

Greenville Finishing Co., Greenville, R. I., has been purchased by John R. Illingworth. There will be no change in personnel or operations at Greenville, and dyeing, printing and finishing will continue.

J. L. Stifel & Sons, Inc., Wheeling, W. Va., will close down about July 1.

YESTERDAY—Stonecutter Mills, pioneers in providing workers with good lighting, installed this fluorescent system in their weave shed in 1939—a year after General Electric developed the first practical fluorescent lamp.



TODAY—To take advantage of newer sources and techniques developed by General Electric, this new lighting system was installed. Now there are no more sharp, tiring contrasts of large dark and light areas—and less worker fatigue.

You can do what Stonecutter Mills did!

New General Electric Lamps can make your weave shed safer . . . more efficient

YOU can do what they did at Stonecutter Mills, Spindale, N. C. They picked new General Electric High Output Fluorescent Lamps in relighting their weave shed. The higher light output and excellent performance of these lamps make the weave shed more efficient. It is a safer place to work. The employees enjoy the more pleasant over-all brightness.

G-E LAMP UNIFORMITY—Besides their much greater light output, these G-E Lamps have an extremely *uniform* life. An average of 99 out of each 100 lamps *will still be burning after a full year's service* in single shift plants. And they are 99.9% free of physical defects which could affect their performance in normal service.

For additional information on how G-E Lamps give you more light at less cost, write: General Electric Co., Large Lamp Dept. TW-67, Nela Park, Cleveland 12, Ohio.

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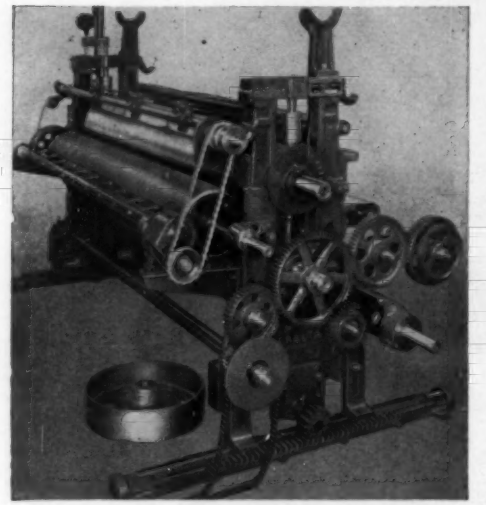

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NEWS ABOUT MEN

James Alverson has been promoted to assistant secretary of Standard-Coosa-Thatcher Co., Chattanooga, Tenn.

John W. Bagwell has been named vice president of Cone Mills Corp., Greensboro, N. C.

Ted C. Balou has been named manager of Firth Carpet Co., Burnsville, N. C.

G. Ellis Butler has been named assistant treasurer of Standard-Coosa-Thatcher Co., Chattanooga, Tenn.

Rupert M. Cassell has been promoted to assistant general manager of Roanoke Mills, Inc., Roanoke, Va.

William L. Cavanaugh has joined Haledon Textile Processors, Inc., and Cambridge Textile Processors, Haledon, N. J., as assistant to Herbert Bernstein, president.

Julius E. Chapman has become assistant to Fred Phillips, president of Buck Creek Cotton Mills, Siluria, Ala.

J. Morton Curran, Jr., will become president of William L. Barrell Co., Inc., New York, N. Y.

Philip E. Doblin has been named vice president in charge of merchandising of all divisions of Wamsutta Mills, New Bedford, Mass.

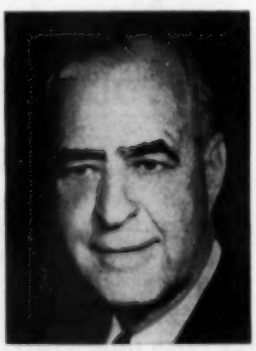
JAMES A. CHAPMAN, president of Inman Mills, Inman, S. C., has been named second vice president of the American Cotton Manufacturers Institute.

Charles Eager has been promoted to assistant secretary of Standard-Coosa-Thatcher Co., Chattanooga, Tenn.

George Felker, 3rd, has been appointed vice president of Reigel Textile Corp., New York, N. Y. and is in charge of operations planning.

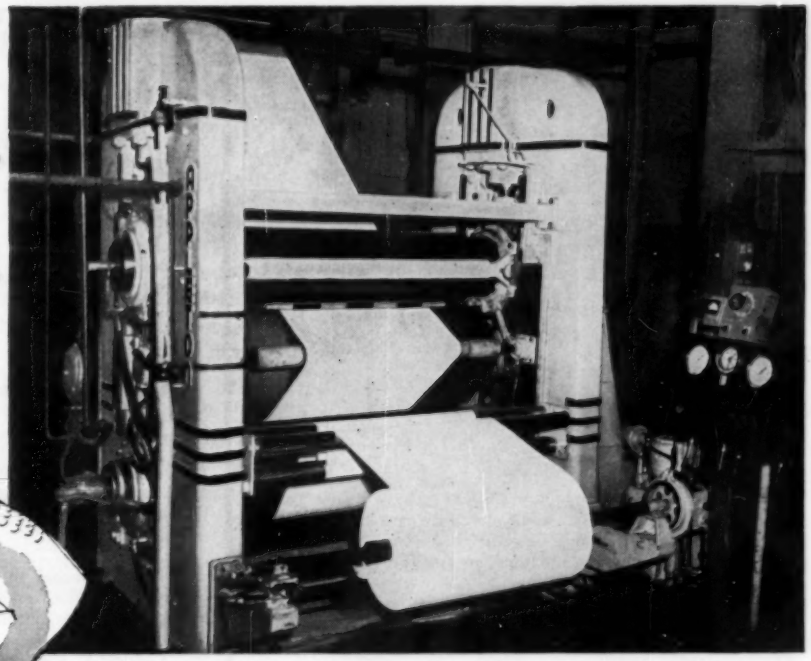
L. K. Fitzgerald has been named assistant general manager of Rosemary Mfg. Co. and Roanoke Mills Co., Roanoke Rapids, N. C.

FRED T. DAVIES has been elected vice president in charge of manufacturing at Hightstown Rug Co., Hightstown, N. J.



HARRY V. REINER has been elected president of R. G. Buser Silk Corp., Paterson, N. J., and Murfreesboro, Tenn.

Choose your Champion



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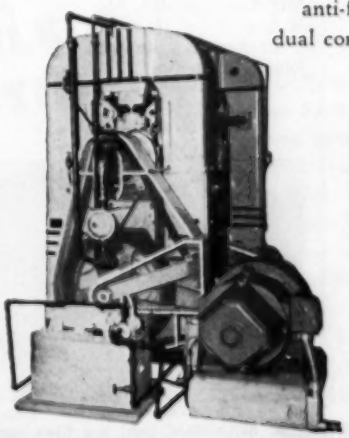
The Appleton 3 Roll Hydraulic Friction Calender —available in 40 to 120 Ton models—takes difficult jobs in easy stride, performs dependably day after day, combines speed with consistent quality. Illustrated is the 80 Ton model. Its specialty— Everglaze Glazed finishes.

Long life features include all rolls mounted in anti-friction bearings with force feed oil lubrication . . . dual control pressure system . . . cooling cylinder . . . 40 h.p. Reliance V.S. drive.



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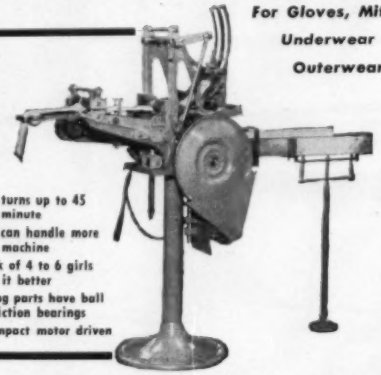
For Gloves, Mittens, Underwear & Outerwear



- Cuts and turns up to 45 cuffs per minute
- Operator can handle more than one machine
- Does work of 4 to 6 girls and does it better
- All moving parts have ball or non-friction bearings
- Small compact motor driven

Here's a machine you can't afford to be without! This new fast-producer is a completely automatic machine for circular knitted tubing or sewed knitted tubing. Tubing goes in one end . . . machine cuts and turns cuffs which come out the other end and are neatly stacked in trough ready to sew on garments. Standard width machine (illustrated) is adjustable to handle tubing 2" to 3" in width . . . will cut and fold double cuffs 2" to 6½" in length. Also made-to-order sizes for knitted rib tail on sweat shirts and various outerwear garments. Send for information NOW.

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NEWS ABOUT MEN — Continued

Percy G. Gregory, Jr., has been named vice president of Cone Mills Corp., Greensboro, N. C.

David Grossberg has been elected secretary of Stern & Stern Textiles, Inc., New York, N. Y.

Jack Harlow has been appointed general manager of Velveray Corp.'s mills, Fall River, Mass.

R. M. Hicklin has been named superintendent of manufacturing at Eagle & Phenix Div., Fairforest Co., Columbus, Ga.

Carl S. Kincaid, Jr., has been appointed vice president of Magnet Mills, Clinton, Tenn.

Garnett K. Kincaid has been named secretary and assistant treasurer of Magnet Mills, Clinton, Tenn.

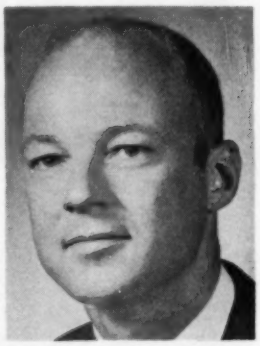
Edward Kosiba has been named to head the technical department of the spun-synthetic-fiber division of J. P. Stevens & Co., New York, N. Y.

Philip J. LaMonica has withdrawn as president of Avalon Dyeing & Finishing Co., Paterson, N. J.

Austin B. Mason has been elected president of Ludlow Mfg. & Sales Co., Ludlow, Mass.

Randolph Montgomery has been elected a director of Bates Mfg. Co., Lewiston, Me.

Strother E. Murdoch has joined Cramerton Mills, Burlington Industries, Gastonia, N. C., as manufacturing manager of cotton plants in the Gastonia area.



JOHN B. CARON has been elected president of Caron Spinning Co., Rochelle, Ill.

Piper M. Osborne has joined the supervisory staff as special assistant at Eagle & Phenix Div., Fairforest Co., Columbus, Ga.

William H. Potter has been appointed director of operations for all Berkshire Hathaway Mills, New Bedford, Mass.

John W. Riggenbach has become president of Bristol Textile Printers, Inc., Bristol, R. I. He will also serve as treasurer.

Orin W. Riley has been named superintendent of Shelby Cotton Mills, Shelby, N. C.

Keith C. Rogal has joined Puritan Looms, Inc., Philadelphia, Pa., in an executive capacity.

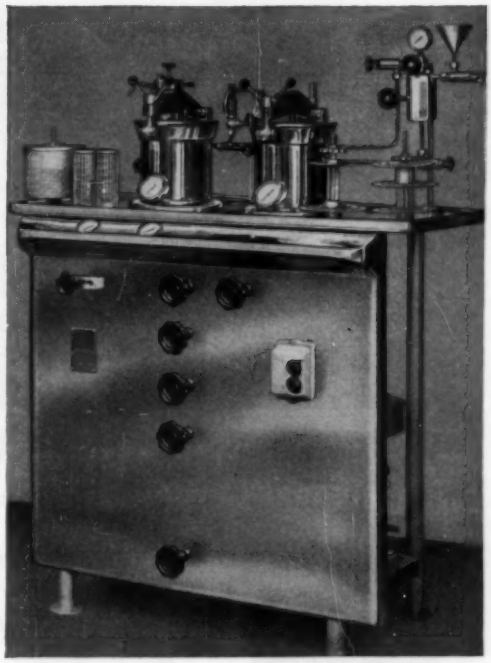
Ben W. Schwartz has been

J. A. BRADSHAW (left) has been named general superintendent of Fulton Bag & Cotton Mills, Atlanta, Ga. DUNCAN M. VEAL (center) has been named assistant superintendent, and DIXIE M. R. MILLS (right) has been appointed technical superintendent.

Pre-Test Your Dyeing Formulas & Techniques

with a SCHOLL

High-Temperature Laboratory Dyeing Machine



With SCHOLL Laboratory Dyeing Machines you can carry out versatile and dependable dye-testing on any textile fiber in any form. Exactly proportioned to production machines, they enable you to avoid changes or corrections once full-scale dyeing is begun. You can add dyestuffs and chemicals, or remove samples at any time, without interrupting the cycle. Dyeing can begin above or below the boiling point—and be carried on with or without pressure. The overflow and reserve tank lets you prepare a new bath while continuing to dye in the main pressure kier. Construction is entirely of acid-resistant stainless steel.

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named executive vice president of Plymouth Dyeing Co., Inc., Paterson, N. J.

Carlton H. Stauffer, new head of the Narrow Fabrics Institute, New York, N. Y., is president of York Narrow Fabrics Co., York, Pa., and not of Narrow Fabrics Co., as reported in our March issue.

James W. Swiney has joined Bryant Finishing Co., Quidnick, R. I., as vice president.

Mario Tedeschi has joined Amity Dyeing & Finishing Co., Glendale, N. Y., as head of finishing operations.

Leon Tingler has been named assistant superintendent of dyeing and finishing, Eagle & Phenix Div., Fairforest Co., Columbus, Ga.

William Wetzgold has been named manager of Forstmann Woolen Co.'s worsted spinning mill, Garfield, N. J.

Textile World

OBITUARY

Samuel J. Aronsohn, 84, president and founder of Samuel J. Aronsohn, Inc., New York, N. Y.

Richard B. Bohaker, 74, former sales representative for Stein, Hall & Co., Inc., New York, N. Y.

James E. Bolderson, 77, retired textile colorist and former division superintendent for Pacific Mills, Lyman, S. C.

Charles H. Brook, 74, comptroller for Goodyear Tire & Rubber Co., Akron, Ohio.

James B. Carson, 60, president of Pearce Woolen Mills, Latrobe, Pa., and director of Woolrich Woolen Mills, Woolrich, Pa.

F. C. Cerwonka, 59, former general superintendent of Keystone Weaving Mills, Lebanon, Pa.

S. J. Du Pre, Sr., 82, retired president of Glendale Mills, Glendale, S. C.

Frank R. Freyler, 56, manager of the Mid-Atlantic Region, Allis-Chalmers Industries Group, Richmond, Va.

James A. Holt, 72, Western executive for Aberfoyle Mfg. Co., Philadelphia, Pa.

Sol J. Levy, 64, board chairman of Hansley Mills, Paris, Ky.

Willfred W. Lufkin, Jr., 54, vice president of Celanese Corp. of America, New York, N. Y.

Harry Medlusky, 68, president of Worcester Fiber & Batting Co., Worcester, Mass.

Warren Moore, 61, former assistant to the president of Fulton Bag and Cotton Mills, Atlanta, Ga.

Carl Osborne, 71, former superintendent for the former American Woolen Co., Fairfield, Me.

Harry A. Severson, 79, board chairman of Barber-Colman Co., Rockford, Ill.

Robert L. Stollberg, 63, vice president and credit manager of Avondale Mills, Sylacauga, Ala.

John M. Vogler, 64, president of Anderson Utilization Co., Anderson, S. C.

Lawrence A. Watts, 79, retired district sales manager in the Akron area for Callaway Mills, LaGrange, Ga.

Francis W. White, 63, former president of the former American Woolen Co., Plymouth, Mass.

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Long PNEUMATIC LAP CONTROL SYSTEM

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The new trend in mill management thinking is toward the 65# to 75# lap with the LONG System. For those mills without conveyors this larger package—due to the smaller diameter (4" to 6" less than present laps)—can be handled manually with efficiency and economy.

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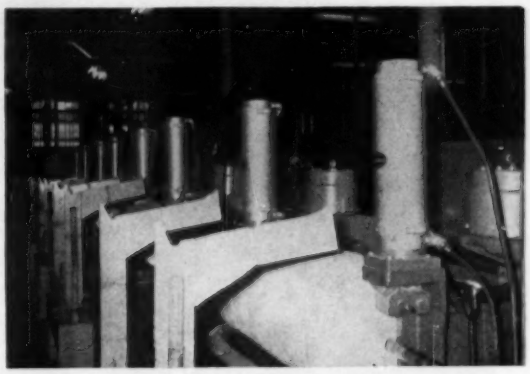
* Names on request.



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Wanted—Working foreman for throwing department—silo and synthetics. Should know skein winders, uptwisters, 5B, and Universal No. 90 quiller. Good Wages—Good Opportunity. P-5209, Textile World.

Wanted—Assistant designer for men's and women's synthetic fabrics. Applicant must be Textile School graduate. Send complete resume including salary expected. Reply to Waumbec Mills, Inc., Manchester, N. H.

POSITIONS WANTED

Supervisor of Weaving Papermakers Felts desires change, personal reasons. Also experienced on Woolens & Worsteds. 25 years experience as Weave Room overseer. PW-4848, Textile World.

Cordage Engineer—Production, Quality Control, Product Development. Twelve years exp., Manila, Synthetics, Sisal, Jute. Will relocate. PW-5089, Textile World.

Commission Throwster, 31; M B A; R I S D; six years experience in production and sales. Desires career position in sales, market research, or product development. PW-5200, Textile World.

31 year old Textile Manufacturing graduate from Clemson College. 4 years experience as weave room second hand. PW-5177, Textile World.

Textile Engineer with extensive industrial engineering experience in large cotton mill—all phases including stds. mgr. Seeks new challenge in same field or production. Location immaterial. PW-5131, Textile World.

PHYSICAL CHEMIST—Ph.D. or equivalent experience. For synthetic fiber research on kinetics of dyeing, mechanisms of dyeing in relation to fibers, and to investigate physio-chemical factors affecting the properties of synthetic fibers.

ORGANIC CHEMIST—B.S. or M.S. for fiber research program. 3-5 years experience preferred. Work includes research in dyeing and finishing of synthetic fibers.

CHEMISTS—B.S. or M.S. in Chemistry or Textile Chemistry. Work in dyeing and finishing area in developing end use for fiber. Duties include Customer Contact service work. Experience preferred but not necessary.

LOCATION: Lee Hall, Virginia
(near Williamsburg)

Qualified applicants should send complete resume of education and experience to:

THE DOW CHEMICAL COMPANY

James River Division
Technical Employment Dept.
P. O. Box 576 **Warwick, Virginia**

POSITIONS OPEN—MEN WANTED

WE CAN PLACE—Cotton mill mgr. (overseas); supt. finishing plant (rayons; foreign); sweater mill mgrs. and supts.; coating supt.; glove factory mgr.; asst. mgr. woolen yarn mill; narrow fab. sample and quality control man.

OVERSEERS for woolen card.; knit goods stitch. and finish.; picking; package dyeing; cotton card. and spin.; face goods finish.; woolen yarn dyeing; cloth room; rayon dye. and fin. (foreign) and woolen spin. 2d shift.

TIME STUDY—Industrial engineers; chemists; salesmen: knit. mach. mechanics and fixers; cost accountant; Draper loom fixer (So. Am.); office mgr.; loom fixers; garnett foreman and fixers; Levers lace mach. fixers; second hands and fixers all depts.; dresser tender; jacquard puncher.

If available for employment, send us in confidence your resume. No fee to be paid unless you accept employment through our Service.

CHARLES P. RAYMOND SERVICE, Inc.
294 Washington St., Boston 8, Mass.
Phone Liberty 2-6547
Over 55 Years In Business

ENGINEER WANTED

ENGINEER for running automatic textile mill. Should be experienced with textile machinery, general textile knowledge and designer. All Nationalities considered. AUTOMAT 957.

P-5142, Textile World,
1125 W. 6th St., Los Angeles 17, Calif.

POSITIONS WANTED

Textile Engineer; Experience in the Worsted and Woolen Yarn Manufacturing Systems, Desires responsible position. Reply to: PW-5121, Textile World.

A man highly trained and experienced as fixer and supervisor on full fashioned hosiery including elastic hosiery and full fashioned sweaters. Experienced in all phases of hosiery manufacturing including quality control. Presently employed. PW-5086, Textile World.

WANTED

Anything within reason that is wanted in the field served by Textile World can be quickly located through bringing it to the attention of thousands of men whose interest is assured because this is the business paper they read.

Are you a Synthetic Fabric Dyeing and Finishing Plant Superintendent or Assistant who wants "opportunity"?

Position available in large American textile company in one of their Latin American mills, for a man with approximately the following qualifications.

A. Textile School or College Graduate.
B. Ten years practical experience in an efficient American synthetic dyeing and finishing plant.
C. Has come up through the ranks and now is assistant superintendent (or superintendent) but is not satisfied—not getting ahead fast enough.
D. Thirty-five years of age or younger.
E. Realizes the opportunities that exist for greater earnings, less income taxes and quicker advancement in the foreign field and who wants to go abroad.
F. Can be single or married but if married his wife must be able to adjust to foreign surroundings.

If you have these qualifications—a good starting salary, a wonderful opportunity and a permanent job (with liberal pension benefits) is available.

Write giving full descriptions. Strictest confidence assured.

P-4922, Textile World,
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

SEE CHEMSTRAND'S AD ON PAGE 199 OF THIS MAGAZINE

Positions available for

ENGINEERS

(Chemical, Mechanical, Metallurgical, Textile, Industrial, Instrument and Civil) and

CHEMISTS

(Organic, Physical, Analytical—Instrumental and Wet Method, Textile Chemists.)

Write to Technical Personnel Department

THE CHEMSTRAND CORPORATION

Decatur, Alabama

SALESMAN WANTED

Leading manufacturer of textile finishing equipment desires experienced salesman for permanent position. Our staff knows of this ad—send resume in complete confidence.

SW-5165, Textile World,
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

CLASSIFIED SEARCHLIGHT SECTION ADVERTISING

BUSINESS OPPORTUNITIES — EQUIPMENT - USED or RESALE

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EQUIPMENT WANTED or FOR SALE ADVERTISEMENTS acceptable only in Displayed Style.

Send New ADVERTISEMENTS or Inquiries to Classified Adv. Div. of Textile World, P. O. Box 12, N. Y. 36, N. Y. for July issue closing June 14th

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LIQUIDATING
WILTON CARPET MILL
of
Gulbenkian Seamless Rug Company, New Brunswick, N. J.

WILTON LOOMS COMPLETE with JACQUARDS, CREELS, MOTORS and DRIVES.

1—27" (¾) 11—36" (4/4) 2—72" (8/4) 15—108" (12/4) 6—144" (16/4)

DYEING, FINISHING, WINDING ETC., with MOTORS and DRIVES.

C&M SHEARS 1—72" (8/4) Single, 1—108" (12/4) Double, 1—144" (16/4) Single
P&S 2 Bowl SKEIN SCOURING Machines.
Hydro-EXTRACTORS 48" Copper Baskets.
Bailey Yarn DRYERS 16 arm units
Hussong 500-1000 lb. DYEING UNITS.
Butterworth DRUM DRYER 150" x 86" dia.
SEWING MACHINES Single and Double Needle.
Also: Lazenby Cop Winders, Allen Spoolers, F&J Twister, L&G Spoolers, Cohoes 2 cyl. Slasher. Large lot of Supplies, Box Trucks, Complete Machine Shop etc.

EXCLUSIVE SELLING AGENTS

John J. McCloskey Inc.
W. Knight St, Collingswood, N. J.
Collingswood 5-0305

McDowell Associates Inc.
41-E. 42 St, N. Y. C.
Murray Hill 2-7417

FOR SALE

"Complete Chicago Tramrail (Stak-Rak) System for Roll Goods Storage and Warehousing.

Consists of:

6—Motor Driven Trams
6—Motor Operated Hoists

Miscellaneous Columns, Posts and Shelving to cover an area of aproximately 27,000 sq. ft.

This system is operating in a plant with column spacing of 30' x 40' and can be seen for the next 60 days."

Please address your inquiries to the Purchasing Department, Greenville Mills, Inc., Greenville, Mississipi.

FOR SALE

STAINLESS STEEL TANKS 60 gal. to 10,500 gal.
MARCO FLOW MASTER PROCESS EQUIP. ST. ST.

PERRY EQUIPMENT CORP.
1430 N. Sixth St. Phila. 22, Pa.
ST 4-3505

SLASHERS FOR SALE

For 54½" wide warps:
1 Model 55 AIR-DRI slasher drying section
1 Model 55 AIR-DRI slasher drying section, used 18 months

FS-5197, Textile World,
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

"SPECIALIST IN THE DISMANTLING, MOVING AND ERECTING OF TEXTILE MACHINERY"

LOUIS P. COTE, INC.

317 Blucher Street, Manchester, N. H.
Telephone: NAtional 3-1533 or 4-4271

- Rigging
- Packing
- Fully Insured
- Export Crating
- Local and Interstate Moving

WANTED
Small Stainless Steel
PACKAGE DYEING MACHINE
Size: — up to 50 pounds.

W-4565, Textile World,
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

YARN DYE PLANT
FOR SALE or RENT
Merger Considered

BO-5150, Textile World,
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

WANTED
ONE USED REINER 21" WARPER with 600 END CREEL

W-5007, Textile World,
520 N. Michigan Ave., Chicago 11, Ill.

WANTED—NEW OR USED
LAUNDEROMETER, WEATHEROMETER OR FADEOMETER

CLAREMONT
WASTE MANUFACTURING CO.
CLAREMONT, N. HAMPSHIRE

FOR SALE
Complete one set Woolen Mill
located in north west North Carolina.

FS-5062, Textile World
Class. Adv. Div., P.O. Box 12, N.Y. 36, N. Y.

DYESTUFFS
Will buy your surplus and obsolete dyes and chemicals for cash.

NEW ENGLAND PRODUCTS CO.
91 Oliver St. Boston, Mass.
Established 1919

WANTED
WHITIN TAPE CONDENSERS 48" MODEL K4A
ALSO
48" LARGE BRAMWELL FEED BOXES

Reply: W-5228, Textile World,
Class. Adv. Div., P.O. Box 12, N. Y. 36, N. Y.

— EQUIPMENT WANTED —
NEW OR USED
60" SUSPENDED EXTRACTOR
BOTTOM DISCHARGE

W-5063, Textile World
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

Wish to Purchase USED EQUIPMENT
One Saco Lowell Lap Meter, One Frazier Permeameter and One Shirley Analyzer. Please forward information on price, Machine age and condition to

W-5004 Textile World
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

If there is anything you want that other readers can supply
OR . . . something you don't want— that other readers can use—
Advertise it in the
SEARCHLIGHT SECTION

WE OFFER FOR IMMEDIATE SALE

30 U.S. TEXTILE FACE DRIVE TWISTERS—HEADLESS

1950-1951 • • D D • • 8" GAUGE • • 160 SPINDLES • • 2 MOTORS • • 440 V, 3 PHASE, 60 CYCLE

COMPLETE LINE NARROW FABRIC LOOMS

8 Fletcher 48-49 VENETIAN BLIND LOOMS
24 space 4 shuttle cross shot.

4—C&K VENETIAN BLIND TAPE LOOMS
2 shuttle cross shot string tape.

12—1947 C&K TAPE LOOMS
Heavy duty chain heads. 30 space battens, pick clocks, motorized.

LOOMS BUILT TO YOUR SPECIFICATIONS

1—GLODDIE QUILLING MACHINE
BELT DRIVEN • • COMPLETE • • 1949

1—PACKING MACHINE CO.
MODEL FAQ-16990

27" CALENDER—LIKE NEW

1—E & M SLITTING MACHINE

COMPLETE STOCK ROOM

DYE HOUSE MACHINERY

1—20 ARM BUHLMAN DYE MACHINE

5—HUSSONG DYE MACHINES
ALL STAINLESS • • 1951-53 • • LIKE NEW
100 & 600 LB CAPACITY

1—72" VAN VLAANDEREN JIG
STAINLESS • • 1949 • • TENSIONLESS

ALL MONEL PADDLE DYE MACHINES
150—100—75—50—25—5 LB TANKS
AVAILABLE FOR QUICK SALE. OPEN

3' SHALLOW DYE BECK • • STAINLESS
RODNEY HUNT • • 1947 MODEL

2—BEAM TO BEAM INSPECTION FRAMES
64" TO 75" FACE ROLLS • • Forward & Rev

3—V. V. TUBING MACHINES, 70" V. V.
S.S. DYE JIG, 42" EXTRACTOR S.S.

ONLY PARTIAL LISTING

WEAVING SUPPLIES

PORTABLE WARP TIE-IN MACHINE
LS MODEL • • BARBER COLEMAN

REED CLEANING MACHINE
2—STAINLESS CLEANING TANKS

72" RIONER DIRECT WARPER
1949 MODEL

42-SPINDLES WHITIN-SCHWEITER
AUTO QUILLERS • • 2-15, 1-12 • • 1947

1—NASH "88" BOBBIN POLISHER

S-6 AUTO LOOM 2x1 1950 MODEL

CREELS, QUILLS, SHUTTLES, REEDS
AND MANY OTHER ITEMS

12—FLETCHER DUPLEX DOUBLERS 1950–1952

100 SPINDLES PER MACHINE • • 1-2 LB. CAPACITY
COMPLETE WITH BOBBINS • • LIKE NEW CONDITION

6—YARN CONDITIONERS

H&W • • ALL ELECTRIC • • 44-48

1—LYDON CONDITIONER
1951 • • ALL ELECTRIC • • 2 DOOR

1—H & W CONDITIONER 1948
ALL STEAM • • ST-2

1—FOSTER TENSIOMATIC WINDER
MODEL CT — LIKE NEW

1—MILFORD-ASTOR MARKING MACHINE
85" • • ASM 532 HEAT, 220 V, 3 HP

MILLIONS OF BOBBINS & SPOOLS
SEND US YOUR REQUIREMENTS

ROTO CONER

SAMPLE • • 20 SPINDLE • • 1946
BAKELITE ROLL • • LIKE NEW

3—SYKES INSPECTION FRAMES
72" FORWARD & REVERSE
LATE

72" SHEARING MACHINE P&W
WITH ROLLING & SEWING ATTACH.
DINSMORE MACHINE

1—FLOOR SANDING MACHINE
TENANT

MILL SUPPLIES

TOLEDO FLOOR SCALE 6000 LBS
ALL STEEL 6x8 PLATFORM

CANVAS HAMPERS • • CASTORS • • SCALES
DROP WIRES • • METAL CHAIRS & BENCHES
• • • • AND MANY OTHERS • • • •

STAINLESS STEEL PL-90
Mixing Unit

1—300 GAL. S.S. KETTLE & AGITATOR
1—300 GAL. S.S. TANK & HOPPER
& ELECTRIC VIBRATION FEED
CENTRIFUGE EVAPORATOR • • 2-800 GAL.,
S.S. STORAGE TANKS • • S.S. PIPING &
TUBING • • COMPLETE

12—U. S. TEXTILE REDRAWS • • • SPINDLELESS 1951 MODEL

LIKE NEW **60 SPINDLES PER MACHINE • • 7" TRAVERSE BOBBIN**
220V • • 60 CYCLES • • 3 PHASE • • MOTORIZED LIKE NEW

BARGAIN CENTER

2—FULL FASHIONED HOSIERY MACHINES
TEXTILE MACHINE WORKS—16074—16200

30 SECTION AUTO WELT TURNER
KANT RUN MACHINE INSTEP BARS
CENTER LACE ATTACHMENT
RELIANCE DRIVE, 60 GAUGE

40—UNIVERSAL #50 TUBERS
1⅝" QUICK CHANGE ADAPTERS
½" ROLLER BALES—STAINLESS TROUGHS
COMPLETE

12—SIPP EASTWOOD REDRAWS
1951 • • SPINDLES • • 60 SPINDLES PER
COMPLETE

AD-48 TURBO

1953 PREBOARDER • • HARDLY USED
COMPLETE WITH FORMS

1—U. S. TEXTILE HEADLESS PACKAGE
SAMPLE TWISTER • • 1 POUND
40 SPINDLE • • DOUBLE DECK

Wm. Rabinowitz & Sons
TEXTILE MACHINERY, BOBBINS & SUPPLIES
214 - 222 Hamilton Street · Phone HEmlock 3-7497 3-7498 Allentown, Pa.

FOR SALE
MODERN YARN SPINNING MILL
MATTAWIN TEXTILES, LTD., GRAND MERE, QUEBEC

Machinery Purchased New Between 1951 - 1955

9—Lummus Blending Feeders, 38½" wide
1—Lummus Waste Blender, 24" wide
2—Aldrich Condensers, Model 1C-9, 36 x 24"
1—Schofield Pre-Carder, 36 x 42", 25 h.p. motor
1—Whitin Wool Tap Cutter, Model D6, motor
2—Aldrich 2 Beater Pickers, 40" wide, motor
26—Platt Cards, revolving flats, 40" wide, 27" doffers, 14" coilers, 100/110 wire, motor driven
4—Whitin Cards, roller tops, 40" wide, 27" doffers, 12" coilers
32—Del. Reiter Drawing Frames, 3 over 4 roll, 12" coiler
32—Del. Platt Drawing Frames, conventional, 14" coiler
1—Warner-Swasey Quad Pin Drafter, 14" coiler
1—Holdsworth Gill Recorder, can or ball creel, 14" coiler
2—Reiter Gill Boxes, 12" coiler, motor
3—Reiter Slubbers, 11 x 4½, 90 spdls, Roth Long Draft
4—Platt Slubbers, 9 x 4½, 132 spdls., Casablanca L. D.
8—Reiter Spinning Frames, 276 Spdls., Roth L. D., 3½" ga., 9" traverse, tape drive, Pneumafil, 10 hp motor
16—Platt Spinning Frames, 272 spdls, Casablanca Long Draft, 3¾" gauge, 9" traverse, tape drive, Pneumafil.
6—Reiter Twisters, 240 spdls, 4½" ga., 10" traverse, tape, motor driven
2—Saco-Lowell Twisters, 160 spdls., 3½" ga., double roll.

Republic
TEXTILE EQUIPMENT COMPANY
Tel: Courtland 7-1591 — 40 Worth Street, New York 13, N. Y., U. S. A.
REFINANCING • APPRAISALS • PURCHASE & SALE
LIQUIDATIONS OF MILL PROPERTIES • PURCHASE AND SALE OF USED MACHINERY

COMPRESSORS VACUUM PUMPS
For the Finest in Rebuilts
1902 AMERICAN 1957
5 to 20 HP Tank Mounted

93 CFM 100 psi 7x6 Ingersoll-Chicago
137 CFM 100 psi 7x7 Ingersoll ES1
184 CFM 135 psi 8x9 Ing. ES
234 CFM 100 psi 9x9 Chic-T
283 CFM 35 psi 10x7 Ingersoll ES1
321 CFM 125 psi 10x11 Worth HB
354 CFM Vacuum 14x5 Ingersoll
364 CFM Vacuum 14x6 Ingersoll
437 CFM 40 psi 12x9 Ing. ES New Cylinder
465 CFM 100 psi 12x11 Ing. ES
622 CFM Vacuum 18x6 Ing.
686 CFM 100 psi 14x13 Ingersoll ES1
823 CFM Vacuum 18x7 Ing. ES
868 CFM 100 psi 17—10x12 Chicago OCE
1016 CFM 55 psi 17x13 Ing. ES
1085 CFM Vacuum 21x9 Worth
1270 CFM 40 psi 19x13 Ing. ES1
1600 CFM 40 psi Fuller C-300-Syn

SULLIVAN WN-114
1385 CFM 125 psi 200 HP 13—8x7—3-60-550

Portables 60'-600' gas-diesel
American Air Compressor Corp.
Dell & Tex Streets — North Bergen, N. J.

MILLER MACHINERY CO.
66 RAILROAD AVE. PATERSON, N. J.
Tel. Sh 2-5467-8
Textile Machinery and Supplies
BOUGHT AND SOLD
Warpers • Winders & Quillers • Looms

BIALEK'S BEST BUYS

WHITIN COMBERS, MODEL K, 1947-8, WITH "J" COMBS, IMPROVED ROTH ASPIRATORS, BIJUR ONE-SHOT LUBRICATION
—EXCELLENT CONDITION—

22—C & K, W-3, 4 x 1, 76" B. S.
188—DRAPER 44" XD, DOBBY LOOMS
85—C & K, S-5 WITH S-6 CLUTCH, 56" R. S. FULLY EQUIPPED
BARBER-COLMAN HI-SPEED AUTO. QUILLERS, 1949-51, 30SP EACH
UNIVERSAL NO. 50 CONERS, 1953.
S. S. EMULSION ROLLERS, TROUGHS, PINEAPPLE ATTACHMENT
WHITIN AUTO. QUILLERS
B. C. KNOTTERS, LS
USTER DROP WIRE MACHINE, 1956
COCKER WARPER, CREEL
HERMAS 4-BLADE SHEARER

THEODORE BIALEK & CO.
6704 Empire State Bldg. — New York 1, N. Y. — *Longacre 3-4978-9*
11-20th Ave. — PATERSON, N. J. — *Lambert 3-5886-7*

WE HAVE FOR SALE
1—VV 60" 2 roll quetch
1—VV-2 roll 56" pad
1—VV 90' 66" super tenter frame with housing
1—VV 66" Palmer—low type
3—Hinnekins 52" boil off machines
1 set of 8SS 72" cans
38—SS dye becks 5' to 16'
2—125 hp Keeler boilers 1956
25—SS Finishing trucks 66" x 43"
10—SS Box trucks 60" x 36" x 30"
1—VV 80' 66" tenter frame w/housing
4—Merrow 60D3b
1 set 18—144" SS cans, BB, siphons reeves w/motor
1 set 11—94" SS cans
30—assorted SS cans 68" to 87" 4-new
6—P&H 1000 lb electric cable lifts
MAR-DAY TEXTILES
52-60 BERKSHIRE AVE. PATERSON 2, N. J.
MU 4-5132

HOSIERY MACHINES
used and rebuilt
KNITTERS — RIBBERS — LOOPERS
CYLINDERS — DIALS — TRANSFERS
HOSIERY NEEDLES AND PARTS
JOS. BRESANI
N. W. Cor. Hancock & Somerset Streets
Phila. 33, Pa.

PRICED VERY LOW

1—Whitin Model D Staple Cutter—Like New
1—Clark Mixing Picker, 24" wide, 6 bar cyl.—NEW
1—Tomlinson Waste Machine, 18" single cylinder
1—Flax Fiber Softener
1—Cocker Slasher, 1949, 7 Can, Reliance Drive
1—Cocker Warper, Reliance Dr., 1949, 840-end Creel
1—Sipp Warper, 1948, EN8039, Cotton System
1—Abbott Filling Winder, 100 spindle, 1948
2—Model L Bobbin Strippers and Hoists
4—Model K Bobbin Strippers and Hoists
3—Collins 120 sp 7" gauge spinning Frame
10—Foster 102 winder, Tube & Cone
1—#50 Cone Winder, Gear Gainer, 3°30' Cones
1—5 Can Cocker Slasher—Rebuilt
1—Worthington 10x10 Air Comp. & Aftercooler
2—Humidification Units—Parks-Cramer, Jackson
6—Cloth Inspection Machines—All Types
2—Shawmut Reed Cleaning Machines—1 Rebuilt
2—Cotton Slasher, Westinghouse Drive

2—100KVA, 550-110/220 volt. Transformers
3—B/C Portable Tying Machines: 1-LL, 2-LS
24—Narrow Fabric Looms—12 piece to 40 piece
48—Draper E Looms, 56" R.S., Dobby, Leno.
116—C&K W2 Looms, 80" & 82", convertible, 4x4
2—Johnson Slashers, 1948, Model CS-9

SUPPLIES
1M—12"x36" Roving Cans, Rolled & Metal Top
100 —Loom Motors, 1 hp., 1800, 550 A/C B.B. 1949
5M—Stop Motion Rods—Also Complete Motions
5000M—Dropwires—All Types
400 —Friction Head Loom Beams, 20" x 46"
4M—Loom Motors, All Types, ½ to 1½ H.P.
24M—NC727, G758 Armstrong Spinning Cots—NEW
1M—Pick Clocks, 2 and 3 shift, complete
10M—Heddles & Frames, 10", 11", 12", 13", 14"
15M—Canvas & Rubber Lug Straps, All Types—NEW
600 —Drawtex Heddle Frames & 1 million heddles

MACHINERY SALES CORPORATION
22 Elm St., P. O. Box 367
New Bedford, Mass. — WYman 6-2271

MODERN MACHINERY — For Sale

1—Harwood 54" Pit Feed w/Magnet, 1944
1—P. & S. 48" Super Picker, 1945
1—D. & F. 60" Tape Condenser Mod. X1ADI, 1947
1—P. & S. Mod. 550 Duster w/Picker Head, 1948
1—Schofield 72" Carding Picker, 1950
3—Foster 102, 80 Sp. Wood Cone Winders, 1948
1—Abbott 50 Sp. Quill Winder w/Loader, 1954
1—P. & W. "Vertitex" Cloth Exam. Machine, 1952
2—Hunter 66" Acid Rinse Bowls, 1948
1—Gessner 72" x 36" Semi Decatur, 1948

FRANK W. WHEELER CO.
Adams Ave. & Wingohocking St.
Philadelphia 24, Pa. Phone JEfferson 5-4771

LIQUIDATING

MODERN DYEING and FINISHING MACHINERY of UNITED PIECE DYE WORKS, LODI, N. J.

Our Representative on Premises at all Times

PARTIAL LIST — SEND FOR BROCHURE

ENCLOSED DYE BECKS	ENCLOSED TENTER FRAMES	DRYERS
OPEN DYE BECK	OPEN TENTER FRAMES	SEMI DECATORS
DYE JIGGS	TRUCKS	EXAMINING MACHINES
PADDERS	TUBERS	SANFORIZER
DRY CANS	WILLIAMS UNIT	BOIL OFFS
OPEN WASHER	SLOP WASHER	CALANDERS

We do not have the space to list the many machines and parts for sale in this mill. We urge your inspection to really see for yourself this excellent equipment.

SOUTHERN OFFICE
IPA SOUTHERN, INC.
610 S. Carolina Nat. Bk. Bldg.
Greenville, South Carolina
Tel: 2-3561

IPA

NORTHERN OFFICE
INDUSTRIAL PRODUCTS OF AMERICA
140 Market St., Paterson, N. J.
Tel. Sherwood 2-6614 Cable: Texindus

USED TEXTILE EQUIPMENT FOR SALE

Item #
1S—3-12 Spindle Units Universal #50 Coners—practically new
6S—2 Abbott Winder Automatic Boarding Machines—excellent
17S—12 Warner Swasey 80" Looms—8 cams—Draw-tex frames & heddles M.D. complete—practically new
7S—550 Fibre Filling Boxes—24x11x11½" deep—good
9S—70,000—3¾" three ring filling bobbins with metal tip and base insert.
13S—66 Draper Beams 22" Flanges 76" between flanges, 99 tooth 6 pitch gear.
10S—1—1942 Saco-Lowell, serial #3911 Section Beam Beamer—66½" drum length—32" diameter beam flange capacity.
11N—125 Cargotainers, collapsible, plated steel wire, size 40"x28"x22" deep—good.
12N—8 New Union Street Lighting Standards: design 216, cat. #F236-A1 complete—height 25 3".
13N—1500 ft. New Copper Cable—3 cond/No. 2VCL/2500 volts
14N—4000 ft. New Copper Cable—1 cond/No. 8VCL/2500 volts
1E—Blacksmith Shop complete—Forge, Anvil, Former, 100 Tongs & Swages, 18" Exhaust Fan.
2EG—15—1 Ton Chain Hoist, 6" I Beams & Trolleys
6E—Victrola Record Cabinet—steel 500 capacity
7E—Optometrist or Physican's chair—White Porcelain with Black Leather Seat and Head Rest.
8E—Tennant 1½ H.P. Floor Finishing Machine 12" model "C"
9E—Stencil Cutter-Diagraph Ball Bearing, Model DB, 13/16" letters—practically new.

COLLINS & AIKMAN CORP.
ROXBORO, N. C.
Thos. Dixon, Jr. — Phone 4301

McDOWELL ASSOCIATES, INC.

offer the following services:

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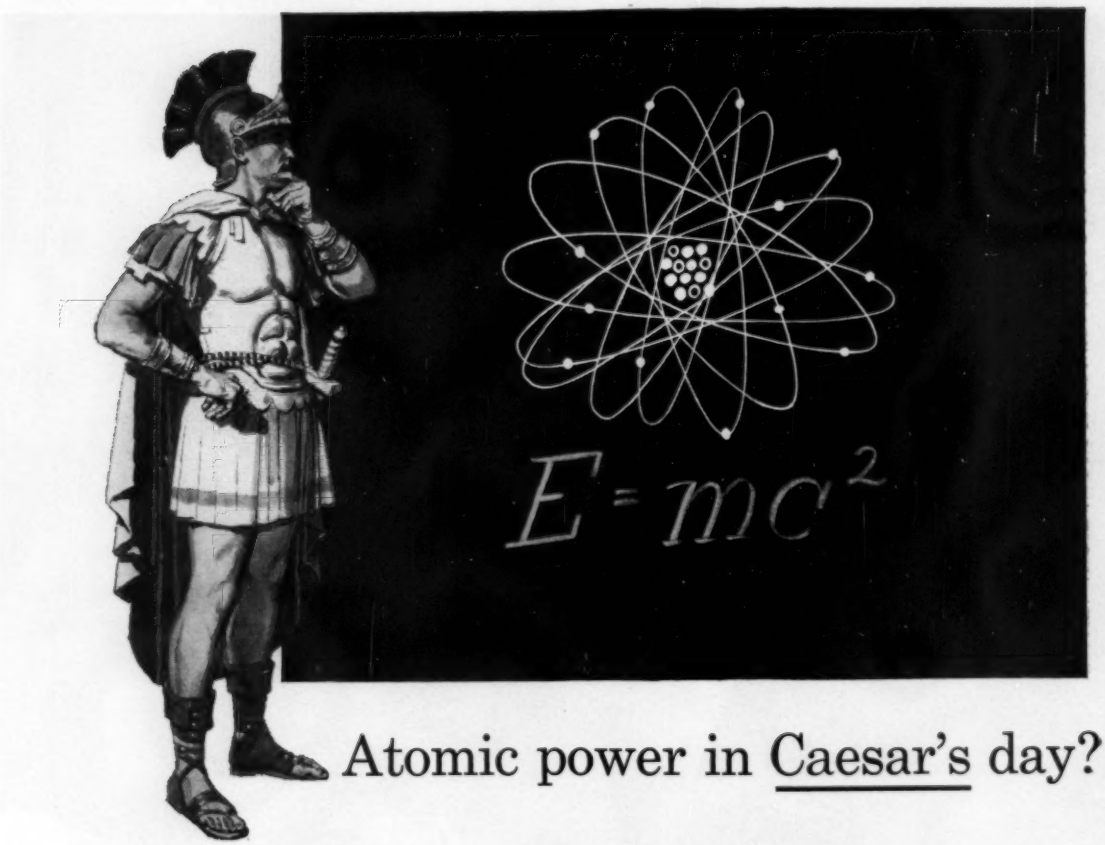

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D. Cleaning Equipment.
E. Dyeing, Finishing, and Cloth Room Equipment and Supplies.
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O. Materials and Components for Machinery and Equipment.
P. Materials Handling, Packaging, and Shipping Facilities.
Q. Power Generation and Transmission (see also Electrical Equipment).
R. Weaving and Warp Preparation Equipment and Supplies.
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Minneapolis-Honeywell Reg. Co. Industrial Div.	72-73	K
Micro Switch Div.	55	F
Monsanto Chemical Co. Plastic Div.	221	C
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Morton Salt Co.	167	C
National Aniline Div. Allied Chem. & Dye Corp.	57	C
New Departure Div. of General Motors Corp.	15	O Q
Oakite Products, Inc.	240	C
Ordnance Gauge Co.	220	L
Platt Bros. Ltd.	148	T
Pneumafil Corp.	16	T
Proctor & Schwartz, Inc.	233	E
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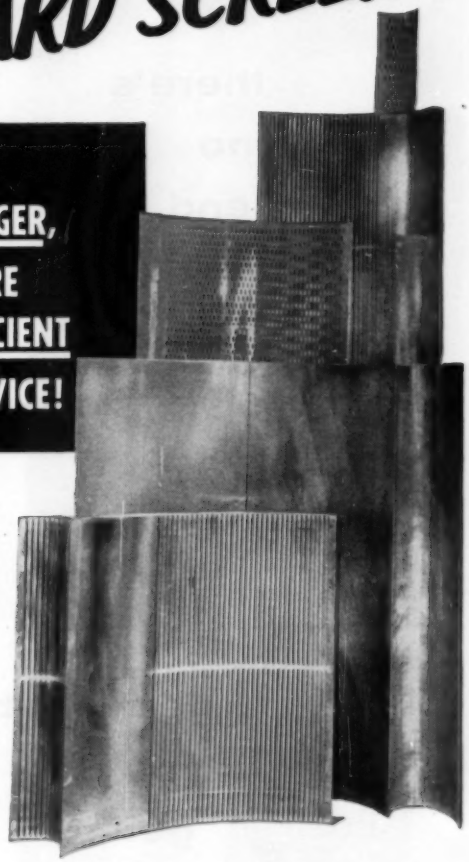

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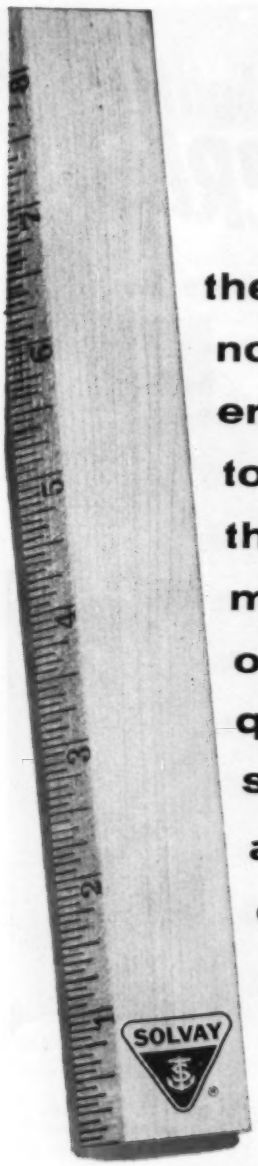

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In fact, with the time-and-bonus incentive system used by Security, the counter records are absolutely indispensable to operation, since workers are paid "by the numbers." That's why you find, on every machine in the mill, a Veeder-Root Revolution Counter of the 2-3-4 Convertible type. And many machines also are equipped with Predetermining Counters which control machine-runs to the exact yardage required. When the pre-set figures are reached, the counters signal the operator or actuate a stop-motion. This prevents short runs and over-runs.

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Veeder-Root
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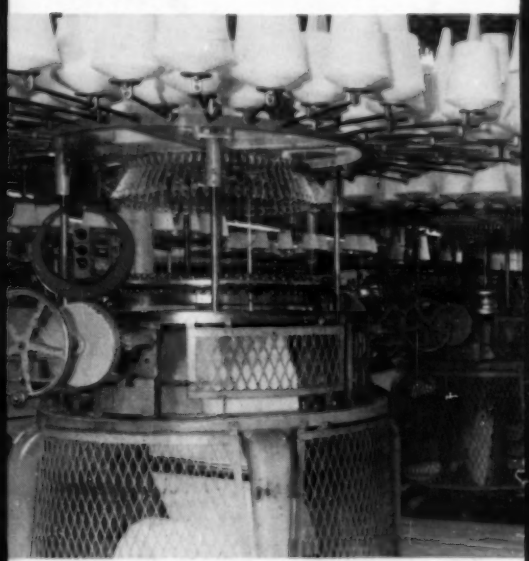
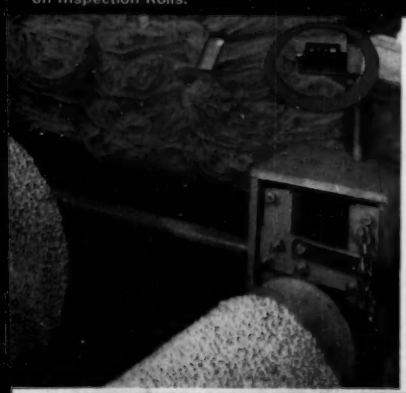
"THE NAME THAT COUNTS"

2-3-4 Veeder-Root Rev Counters, with Totalizers, on Cran Knitting Machine.

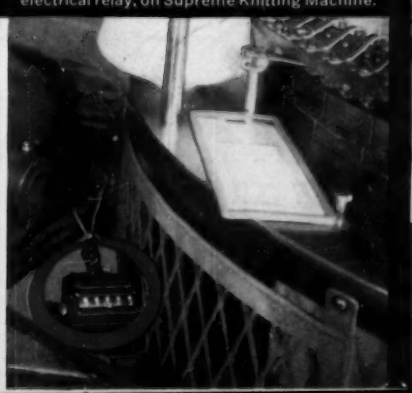


2-3-4 Veeder-Root Rev Counters, with Totalizers, on Supreme Knitting Machines.

Veeder-Root Medium Size Revolution Counter on Inspection Rolls.



Veeder-Root Predetermining Counter, with electrical relay, on Supreme Knitting Machine.



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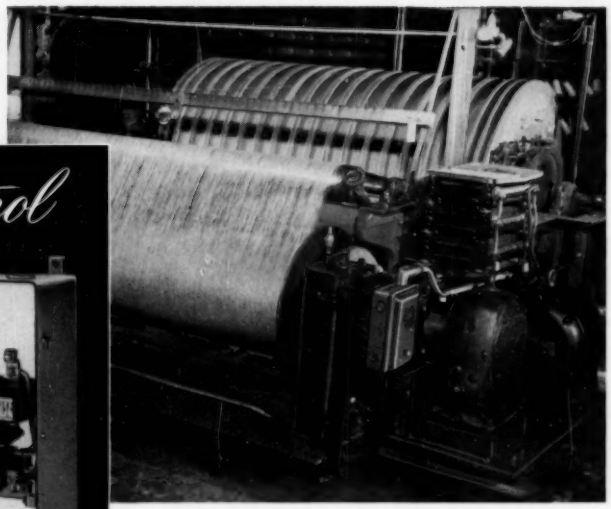
Six of the 8 sizes of Allen-Bradley across-the-line solenoid starters. All have only ONE moving part—your assurance of trouble free operation. Their double break, silver alloy contacts need no cleaning.



Bulletin 709 solenoid starter on machine in large carpet mill. Overload relays in the starter protect the motor against burnouts due to overloading. Neither age nor atmospheric condition will affect the accuracy and reliability of these overload relays.

YOUR CHOICE—

ACROSS-THE-LINE OR VELVET SMOOTH STARTING OF SQUIRREL CAGE MOTORS

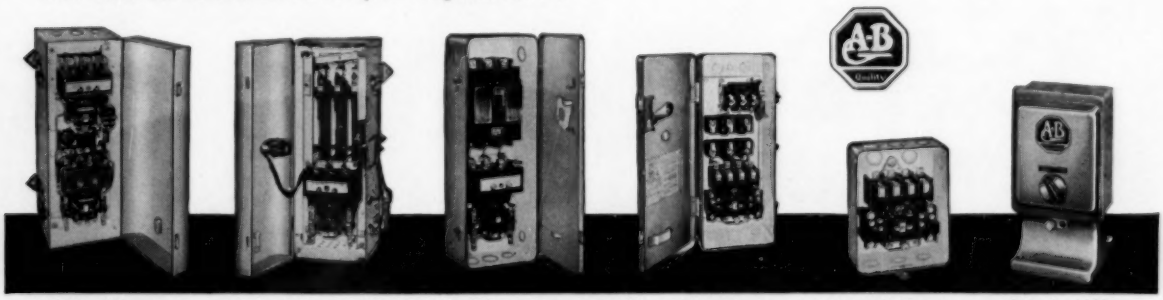
There are two general types of textile machines—1st, quick starting machines, like looms; and 2nd, gradual starting machines, like spinning frames. Each machine requires a specific type of motor starter for best operating results.

Shown above are six Bulletin 709 solenoid starters for quick, across-the-line starting of motors up to 300 hp, 220 v; 600 hp, 440-550 v.

The starters, shown below, include the Bulletin 640 manual and Bulletin 740 automatic resistance starters which provide velvet smooth acceleration of squirrel cage motors. No other starters can equal the performance of these two graphite compression resistance starters.

The Allen-Bradley line includes the accessories found useful in textile machinery operation. These items have established their right to the QUALITY designation which applies to all Allen-Bradley starters. You cannot make a mistake when you specify Allen-Bradley motor control.

Send for the Allen-Bradley Handy Catalog of A-B QUALITY controls. Write, today.



Bulletin 740 automatic velvet smooth motor starter.

Bulletin 640 manual stepless resistance motor starter.

Bulletin 713 combination starter with circuit breaker.

Bulletin 712 combination starter with fused, visible contact, disconnect switch.

Bulletin 709 Size 1 automatic across-the-line motor starter.

Bulletin 1209 manual loom switch—pedestal mounting.

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